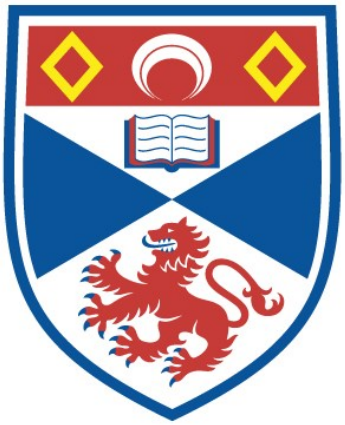
AN ANALYSIS OF ENERGY SECURITY: WITH REFERENCE TO OIL IMPORTS IN RELATION TO THE EUROPEAN COMMUNITY

Helen Georgina Baty

A Thesis Submitted for the Degree of MPhil
at the
University of St Andrews



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AN ANALYSIS OF ENERGY SECURITY, WITH REFERENCE TO OIL IMPORTS, IN RELATION TO THE EUROPEAN COMMUNITY

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A thesis submitted to the Faculty of Arts, University of St Andrews, for the degree of Master of Philosophy (Mode A).

St Andrews, January 1990

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Finally, to HG - an example of pure selfishness.

ABSTRACT

This thesis analyses the subject of energy security within the context of the European Community. Energy security as a concept may be seen as the threats facing a state, measurable, in this instance, by the level of oil imports, and the measures taken to ensure the continued security of supply and the reduction of dependence. It is also a concept which has a further two dimensions that of vulnerability and of sensitivity, both of which are components of interdependence.

The European Community is reliant on a high degree of oil imports to meet its consumption requirements and it is thus vulnerable to an interruption in its supply. This vulnerability has implications for all sectors of a state's economy particularly transport.

The European Community's energy policies, evolved as a response to not only its high degree of dependence, but also to the two oil crises of the 1970s and as such are reflective of a reactive stance to past events. On the whole, it is doubtful whether its present energy policies, with their continuing aims of securing adequate energy supplies; reducing dependence; developing secure and competitive alternatives to oil; containing energy consumption and restricting oil's share in total energy consumption, will prove effective in the event of another oil crisis.

However, EC energy policies also have to be seen within the wider context of the European Community and whether they are indicative of a common energy policy. The Community energy policies do not fulfill the requirements of a common policy mainly because of the divergencies apparent among the various member states and, more importantly, because of the lack of a mandate in any of the Treaties to adequately cover all aspects of energy.

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GLOSSARY AND UNITS OF MEASURE

Arabian Light 34° API :

API(American Petroleum Institute) density : scale used to express density of oil, formula for converting API density into decimal density (at a temperature of 60°F or 15.56°C):

$$\text{API density degrees} = \frac{141.5}{\text{decimal density}} - 131.5$$

e.g Arabian Light 34° API = decimal density 0.8550

bpd :

barrels (of oil equivalent) per day

barrel, oil :

circa 159 litres or 42.003348 US gallons = 34.975071 UK gallons

CPEs :

Centrally Planned Economies : China, Albania, Bulgaria, Cuba, Czechoslovakia, East Germany, Hungary, Kampuchea, Laos, Mongolia, North Korea, Poland, Romania, Vietnam, Yugoslavia

CIEC :

Conference on International Economic Co-operation
Four Commissions (1975-1977) dealt with energy, raw materials, development and financial matters. Participants included industrialised, developing, and OPEC states.

Crude Oil :

Mineral Oil consisting of a mixture of hydrocarbons of natural origin.

EC :

European Community : Established 1958 : Belgium, Denmark, France, West Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain and the United Kingdom

ECSC :

European Coal and Steel Community : Established 1952 by the Treaty of Paris. Same members as for Euratom and the EC. Aims to harmonise production policies and establish a common market for coal, iron ore and steel.

Euratom :

European Atomic Energy Community : Established 1957 by the Treaty of Rome. Members are the same as for the ECSC and the EC. It co-ordinates atomic research and development, provides for joint power projects and encourages the pooling of scientific and technical information.

IEA :

International Energy Agency : working body of the OECD : 21 participating members : Australia, Austria, Belgium, Canada, Denmark, West Germany, Greece, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom, and United States

Mtoe/mtoe :

Millions Tonnes Oil Equivalent

NCW :

Non-Communist World

Natural Gas Liquids (NGL) :

Liquid of liquified hydrocarbons produced in the manufacture, purification and stabilization of natural gas. Their characteristics range from those of butane and propane to heavy oils. NGL are either distilled with crude oil in refineries, blended with refined petroleum products or used directly depending on their characteristics.(INTERNATIONAL ENERGY AGENCY : Quarterly Oil Statistics and Energy Balances : 1st Quarter 1989 : OECD/IEA, Paris, 1989 : pviii)

OAPEC :

Organisation of Arab Petroleum Exporting Countries : Established 1968 : Algeria, Bahrain, Egypt(in suspension), Iraq, Kuwait, Libya, Qatar, Saudi Arabia, Syria, Tunisia, and United Arab Emirates (UAE)

OECD :

Organisation for Economic Co-operation and Development (Paris) : Established 1961 : Australia, Austria, Belgium, Canada, Denmark, Finland, France, West Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, spain, Sweden, Switzerland, Turkey, United Kingdom, United States of America, and Yugoslavia(special status)

OEEC :

Organisation for European Economic Co-operation : Established 1948 : predecessor of the OECD

OPEC :

Organisation of Petroleum Exporting Countries : Arab members: Algeria, Iraq, Kuwait, Libya, Qatar, Saudi Arabia, UAE : Other members: Ecuador, Gabon, Indonesia, Iran, Nigeria and Venezuela

Petroleum Products :

Any oil based products which can be obtained from primary distillation and are normally used outside the refinery industry.

Refinery Feedstocks :

A product of combination of products derived from crude oil destined for further processing in the refining industry other than blending.

INTRODUCTION

"Oil matters. When the twenty-first century dawns it will still meet more than a third of the world's total energy needs."(1)

Today's advanced industrialised economies run on energy. It is a prerequisite for sophisticated industrial production; for a complex infrastructure and for high standards of living. Oil plays a crucial role in this. But, it is a role which carries with it particular political risks and factors - ones which stem from the dependence of a state on imports from abroad. Inherent in such dependence are security risks. At a time of such abundant availability of oil it is all too easy to adopt a relaxed attitude towards energy security. But it is an attitude that belies the innate dangers to be found in the present situation.

The purpose of this thesis is two-fold. Firstly, it is to look at and analyse the concept of energy security in relation to oil. Since energy security, for the purposes of this thesis, consists of both the extent of the vulnerability or sensitivity of a state to an interruption in its supplies of (imported) oil and to the measures needed to ensure against and reduce the probability of a supply interruption,

therefore, these two aspects of the energy security equation or relationship will be examined, using the European Community as a case example.

The first section will assess the level of vulnerability facing the European Community member states. Since vulnerability is primarily calculated by the level of imports, this will be used as the main measure along with a further two other indicators : the sources of imports and the domestic consumption patterns of oil. Having established the level of vulnerability, the second section will analyse the effectiveness of the European Community's energy policies, particularly those of its 10 year objectives in reducing vulnerability and ensuring security of supply.

In this thesis it will also be ascertained whether energy security, as a concept, still retains its relevance in view of recent developments on the international energy markets. These are currently experiencing an oil oversupply or 'glut' situation as OPEC members consistently exceed their quota levels of production. This does not mean it is a period for complacency on the part of the oil consumers and that, hence, energy security may be consigned to an academic dustheap. It is precisely because of the present situation and in view of previous experiences, that energy security is still relevant and pertinent. As Hogan and Mossavar-Rahmani have observed : "...the current glut provides the interlude and the opportunity to prepare for the next famine."(2) However, it must be realised, at the same time, that the results of such

an attitude, on the part of a state, are determined by a whole range of current political and economic considerations.

The second purpose of this thesis is to suggest that despite the policy options currently available to member states and despite moves towards fulfilling them, be they limited in impact, the whole future orientation of the EC's energy policies, particularly those affecting oil, should be to move away from the current reactionary stance they incorporate towards an anticipatory one. EC energy policies are, thus, the result of past events and have failed to take cognisance of current and future perceptions. The challenge which faces the oil consumers is "....to anticipate the scope of the problems of tomorrow, and to put in motion those policies that will bear fruit later when the market tightens."(3) This view, of course, brings into question the whole validity behind a 'common' energy policy for the European member states.

The energy sector covers not only oil but coal, natural gas, nuclear energy and a host of 'alternative' energies (the main ones being hydro-electric, geothermal, solar and wind). All are, in their own way, vital to the industrial, agricultural, commercial and domestic sectors of an economy - but none more so than oil. Thus, the main focus of this thesis will be on oil which will be taken to mean, principally, crude oil and petroleum or finished products unless otherwise specified. It is, therefore, a generalisation of the term without keeping to strict technical definitions.

The reason oil has been chosen over the other main energy sources is because of its pervasive and major role in industrialised economies. It continues to constitute a major source of energy consumption in OECD economies - in 1988 it provided nearly 43 percent of their total consumption requirements, 45 percent of Western Europe's and 46 percent of the European Community's.(4) Within an economy, oil also has a pivitol role, providing all of the transportation sector with its fuel requirements, among others. Furthermore, because of its importance, oil is the only energy source (and possibly the only commodity) whose sudden cut-off would have a decisive and drastic effect on the economic activity of a state and on a state's welfare both political and social. The smaller the proportion of domestic production to consumption, the greater disruption a cut-off would be to an industrialised economy. Finally, it would appear that no adequate substitute to oil is likely to be developed in the coming years in quantities sufficient enough to replace oil as a primary commercial fuel.

The European Community(5) has been taken as the case example because out of the three advanced industrialised blocs in the world - the other two being the United States of America and Japan - it constitutes a formidable trading and economic bloc and, although to a lesser extent, a powerful political entity. This position will be strengthened economically, it is hoped, in 1992 with the implementation of the single European market. It is also a particularly vulnerable entity in not only oil

but also in the other energy fields. In 1988 oil imports accounted for nearly 34 percent of EC energy consumption and 75 percent of oil consumption. This is compared to a comparable figure for the United States 16 percent and 40 percent respectively.

It has been decided to choose as the time period that from 1945 to the present(6) with particular emphasis on the 1970s and 1980s.

It should also be borne in mind that the field of energy, in general, and oil, specifically, is too vast and too complex to cover in adequate detail in this thesis. It impinges on a whole feast of different areas of study from economics through to the sciences both physical and technical. In keeping with the study of international relations, emphasis is placed in this thesis on the politics of oil. The economics of oil have been dealt with elsewhere. It is hoped that where economics has intruded, as it surely will, that justice has been done to it, albeit in a limited way and at the expense of explaining the international political context of oil.

Chapter 1 will examine energy security as a concept and define it more precisely for the purposes of this thesis. The two dimensions of interdependence, namely vulnerability and sensitivity will also be analysed as will that of threats versus vulnerability and the issue of oil imports. Emphasis will be placed on the relevance of it, as a concept, in today's current energy situation.

The second Chapter will establish how sensitive or vulnerable the EC states are to an interruption in their supply of oil; how dependent they are on oil imports and the origin of their imports and whether this heightens or lessens their vulnerability.

Having established the extent of the EC member states' vulnerability and dependence, the next three Chapters will examine the other side of the energy security equation - that of the policies of the European Community and how successful they have been in moving towards the EC's main goals, namely security of supply; lessened dependence on imported oil and the diversification of supplies. These three chapters will focus, firstly, primarily on the historical perspective of the EC's energy policies from the 1950s onwards, and secondly, on the formulation and implementation of the three sets of policy objectives of the European Community. Chapter 5 will provide a brief update on the latest developments in EC energy policy, namely the establishment of the Internal Energy Market for 1992.

Chapters 6 and 7 will then examine the effectiveness of the EC's policy objectives and whether they have attained their goals as originally planned. In other words, whether oil as a percentage of total energy consumption has declined; whether imports have fallen and whether sources of supply have been diversified - thereby ensuring security of supply and reducing vulnerability.

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3. *Ibid.* : p6
4. BP Statistical Review of World Energy : July 1989 : BP p.l.c : p34
5. Hereafter referred to as the EC.
6. The 'cut-off' date has been taken as September 1989.

SECTION I

CHAPTER 1

ENERGY AND SECURITY

For the member states of the European Community(EC) access to and continued use of energy has a bearing on the security and economic well being. The degree to which this is the case, however, varies from state to state. No uniform 'EC' oil need exists. Bearing this in mind, it is necessary to analyse energy security as a concept by first defining security *per se* and then energy security more specifically. The two major dimensions of energy security, arising out of the interdependence between consumers and producers, vulnerability and sensitivity, will be analysed, before moving on to import security as a sub-category of energy security. Without a clear definition of the nature of energy security concepts, it would be difficult, if not impossible, to analyse coherent strategies for dealing with problems and crises when they arise.

Security

According to Spanier, the most common and basic objective that a state seeks is "security". This can mean the following(1) : firstly, at the very minimum it can imply simple physical

survival; secondly, a more common meaning of security refers to the preservation of a state's territorial integrity; finally, it can entail political independence for a state. This, negatively, means freedom from foreign control and, positively, the preservation of a state's domestic political and economic system or way of life. To quote Spanier :

> "Security, then, refers not merely to the maintenance of a state's physical survival and territorial security but also to the perpetuation of the values, patterns of social relations, life styles and varied other elements that characterise its way of life."(2)

In other words, one is speaking of a state of being (a degree of security) which allows a state to feel relatively safe, not forgetting, however, that all states have to endure a degree of insecurity since no such concept as absolute security exists in the state system.(3)

Goldstein(4), in line with Spanier, defines (national) security as comprising of three basic components : territorial integrity, political independence and physical well-being or the continued prosperity of a state in all areas.

(a) Territorial Integrity

The first determinant of security is identified as territorial integrity which, under classic military strategy, involves the protection of borders. As Goldstein demonstrates, this dimension is of minor relevance in the context of energy, since "[n]o major energy producer seems to be in a position to

use its energy resources to acquire the territory of [other] major consumers."(5) It is unclear as to what Goldstein is attempting to imply here, but he seems to suggest that, to date, no major oil producer, for example Saudi Arabia, has used the power or wealth derived from oil to acquire the territory of a major oil consumer. However, the example of a unified Arab desire to see Israel out of the "occupied territories" could be posited as a counter argument to Goldstein. Another example is the Iran-Iraq war, which has shown that territorial ambition can be aided by military might, financed by the production and export of oil.(6) On the other hand, one cannot discount the possibility of oil-short states being tempted to seize what they cannot buy - a situation, at present, which appears highly unlikely due to the surplus capacity now available on world oil markets. However, leaving aside the present oil oversupply on the world markets, would oil-short states seize what they could not buy? The oil producing states are no longer militarily weak, a situation which previously would have provided an incentive for intervention. Hence, to provoke a military conflict between a consumer and producer state would appear to be highly risky. A further related factor is that world oil markets are now so interconnected that an oil shortfall can be easily made up elsewhere, as happened during 1980 at the beginning of the Iran-Iraq war.

(b) Political Independence

Political independence constitutes the second determinant of security. This is an aspect of national security in which energy does appear to insinuate itself more directly, according to Goldstein. "The need to import energy implies dependence. This dependence arises when energy imports are not merely matters of economic convenience, but irreplaceable supplies critical to sustaining a nation's economy."(7)

Energy dependence, therefore, can compromise political independence in a number of ways : firstly, one of the suppliers could try to condition the energy trade concessions in a non-energy area, for example, crude oil sales could be linked to attempts to isolate politically out-of-favour states, or, alternatively, to demands for technological transfer or, more simply, as an instrument to attain diplomatic ends. With reference to the former, this has not proved to be, on the whole, a particularly effective measure as witnessed by Arab attempts to isolate Israel. Finally, an outside party to the producer-consumer relationship could try to extract an advantage by threatening to disrupt energy flows if certain political demands are not met. This has remained, for the most part, a hypothetical example.

(c) Prosperity

The final determinant, identified by Goldstein, is that of physical well-being or more appropriately, the continued prosperity, be it economic, political or social, of a state. This is the area where energy probably has the most obvious security dimension. The safety of a people, national security and the very justification for the modern state are closely bound up with one another. Prosperity, therefore, is primarily linked with economic security and survival. The economic aspect is reflected in energy prices and the consequences thereof, not only for the economy of a state but also for the effect higher oil prices and other factors can have on the military field; and also in the supply and demand of energy. Goldstein appears to omit this aspect of energy but it is particularly pertinent in oil's case, as witnessed by events in the 1970s and early 1980s.(8) Thus, in relation to the security dilemmas posed by energy it appears to be generally the case that energy is primarily an economic problem. The economic effects of rising oil prices, as experienced in the 1970s, affected domestic economies, trading partners and the entire global economic system because of the economic interlinkage of the world economy(9). In the 1970s the supply of oil had economic repercussions as well.

This makes Cooper's definition of prosperity, which he states is the capability of a society to enjoy and cultivate its culture and values, very pertinent. This implies security from external as well as internal threats and involves the maintenance of a standard of living consistent with a society's cultural values.(10) Cooper further argues "that

the needs of national security have not been met if, to protect itself from physical harm, the nation must abandon its values for those of a garrison state."(11)

Ullman states that national security may be defined not merely as a goal but as a consequence i.e. "we may not realise what it is or how important it is until we are threatened with losing it. In some sense, therefore, security is defined and valorized by the threats which challenge it."(12)

This view calls for a redefinition of the threats undermining security, since they ultimately define security. National security, as propounded by Goldstein, Cooper and Spanier, is traditionally seen as the military threats arising against a state's sovereignty. However, according to Ullman, this definition is doubly misleading in that non-military threats are just as likely to undermine the stability of a state and moreover, it presupposes that external threats are more dangerous (to a state's security) than internal ones.

Ullman suggests, therefore, in the light of the aforementioned, that a more useful definition of threats might be :

> "an action or sequence of events that (1) threatens drastically and over a relatively brief span of time to degrade the quality of life for the inhabitants of a state, or (2) threatens significantly to narrow the range of policy choices available to the government of a state or to private, non-governmental entities...within the state."(13)

The first category could cover all types of disturbances and disruptions, ranging from external wars to internal rebellions, blockades and boycotts of raw materials, and natural disasters. All of these categories would impair the well being of a society.

An example of the second category, given by Ullman, could be the threat that the Soviet Union posed to the West at the height of the Cold War in the 1960s and early 1970s. However, threats (to the availability of policy choices) are not confined solely to major powers and may originate from a number of sources : interruptions in the flow of vital resources; terrorist organisations; environmental factors; and violence originating from a developing state. All can, equally, reduce the range of available policy options. However, because such threats are less apparent than military ones, it is easier (for a government) to partially reject or ignore the idea that they do pose a threat to a society or state. Nevertheless, it does not mean that the consequences (of such threats) are not as significant as those arising from military threats. Increasingly, as military threats recede, they are assuming greater importance.

Wolfers(14), in line with Ullman, offers yet another conceptual view of security. He characterises security as an ambiguous concept in that it can be used to cover a range of goals so wide and divergent that it may be interpreted as rather a series of policies of security, than simply a policy of security.(15) In this sense, security becomes a negative

goal involving a total lack of threats or danger. Nye takes this point further and suggests that "how much insurance one needs in order to feel secure is a function of the probability of the threatening event and the magnitude of the potential damage."(16) Nye goes on to add that damage can be defined narrowly in terms of survival or broadly in terms of a whole range of values including welfare, independence, status and power. Therefore, under Nye's definition security implies the absence of a threat to survival. However, survival is rarely what is at stake. For the majority of people, survival does not represent enough. "They wish to feel secure in their continued or future enjoyment of a number of other basic values."(17) In other words, security implies a wider dimension.

Security, therefore, has a broader application than the traditional military aspect. Since 1945 it has had to be pursued in a vastly more complex field than was previously the case. It must now encompass economic, social and internal dimensions. These are the new dimensions of security but they complement rather than replace the earlier and more traditional concerns. With regard to economic security, the uninterrupted flow of critical resources is vital to the continued existence of values in a state. Interruptions in this flow either through market forces or unintended/intended restrictions on supplies can pose an important threat.(18)

Despite the foregoing, security has not yet been given an agreed general definition. It is essentially a subjective

concept, to be defined by decision-makers and dependent on the circumstances and threats (or lack thereof) facing a state or entity at any given period in time.

In this regard, Ullman's definition of security : as not only a goal but as a consequence, which is defined and valorised by the threats which challenge it, provides an acceptable framework in which to look at energy, in general, and oil, specifically. Since the threats arising from oil dependence (as will be discussed below) are mainly not of a military nature but are rather economic and political. However, it should be borne in mind that complete security, in other words, the total absence of any threats is a chimera. It is simply not possible *in practice* for a state to attain such a state of being which *in theory* is what a state is ultimately aiming for. Instead a state has to aim for a managed situation of continued insecurity. This is true of security in general and of energy security specifically.

Energy and National Security

How are energy and national security related? Ebinger(19) argues that there are several links between energy and national security. Firstly, international competition for oil, particularly in a time of crisis, can strain political and diplomatic alliances. This occurs as states move to protect their own interests rather than co-operating to ensure secure access to vital energy supplies. Secondly, reliance on insecure oil supplies can impinge on military security in

several areas : the safeguarding of oil producers against internal subversion or external attack requires difficult strategic choices; and the security of oil importers can be threatened by raising oil import bills. This is no longer a threat in the short term, but one which remains for the longer term should oil prices rise substantially.

Energy and national security are linked in a third way: through political, economic and environmental conflicts over energy development, conservation, and end use which engender uncertainties over future economic conditions and the supply and cost of energy. This can constrain investment and the prospect for enhancing industrial productivity.

Therefore, energy security can be seen as one part of national security, under Ullman's definition. It is valorised and defined by the threats which challenge it.

Energy Security as a concept

Given the foregoing, it is clear that energy security may be seen as one aspect of the widening notion of national security. Energy security is the condition in which governments and consumers believe, and have reason to believe, that adequate reserves, and production and distribution facilities, will be available to meet their requirements for the future and present - either from sources at home or abroad - and at costs which do not place them at a disadvantage or threaten their well-being, be it economic, political, social

or military.(20) Insecurity of energy supply arises, according to Ebinger *et al*, when "the welfare of citizens or the ability of governments to pursue their other normal objectives is threatened, either as a result of physical failure of supplies or as a result of sudden and major price changes."(21)

Energy security also embraces a number of other factors. According to Smart(22), for example, energy security is not only about oil but also encompasses natural gas imports and nuclear security, among others. Secondly, energy security is concerned not only with fuel but the equipment and technology needed to exploit energy and the goods in which energy is embodied, for example the by-products of crude oil and petroleum products such as chemicals, and the processes such as are found in manufacturing, which are reliant on fuel.

In addition to oil imports, energy security is also concerned with the problems arising from indigenous production, conversion or distribution of energy. Indigenous energy resources are not necessarily more secure than those that are imported. An obvious example of this is the 1973-74 British coal strike, the cost of which to the British economy was substantially more than the restrictions simultaneously imposed on oil exports by the Arab members of OPEC.(23) In addition, similar costs could, and have been, incurred when supplies of electricity have been interrupted, by industrial action, accident, plant failure or deficiencies of generating capacity. Finally, a negligible or even negative cost is often

involved in relying on indigenous energy sources. However, not all indigenous sources are insecure. It is preferable, in certain circumstances, to be reliant on indigenous resources rather than on external ones because of the greater degree of control governments have over production and supply. However, the price implications of such a move can have negative connotations for an economy.

The fourth proposition is that energy security involves not only physical supply but the economic costs which have to be borne in meeting energy demand. Thus both security of supply and price since both have an effect on overall security. Both are distinct issues in that security of physical supply does not necessarily imply security or stability of price. The real price of energy can be increased by either relying on a policy of substituting more expensive indigenous fuel sources for cheaper imported fuels; by relying on large investments to curtail current demand for imported fuel sources or by competition for supplies, in a time of crisis, among consumers. The same result can also occur should a state decide to continue importing expensive fuel while withholding cheaper indigenous substitutes as an insurance policy against a future interruption in supply.(24) In both cases the only real benefit to the state concerned will be to insulate it against future price increases should one be imposed by a supplier or if an international energy crisis arises. In the meantime the real costs will be borne by the consumers affected, either through higher price or through subsidies from fiscal revenue.

However, energy is more than an economic issue. It is also a political issue, involving not only the formulation, organisation and implementation of policy, but also the handling of politically induced energy problems which have repercussions in the other sectors of a state. Since it is also a political issue this means that greater resources can be brought to bear than exist in the economic area alone. "The massive amounts of capital that must be generated for energy investment may be easier to raise if governments can intervene in the process with a national security justification."(25)

Finally, energy security as a concept has a narrow perspective. "Energy is a means to some further end of economic or social value, as fuel is a means to the intermediate provision of energy. To act in ways intended to enhance fuel or energy security without any regard to other insecurities thus created is a prescription for disaster."(26) In other words, energy security is only important when viewed in the context of the value it conveys in terms of the economic and social welfare benefits to a state.

Therefore, one may conclude that energy security in Western Europe, and elsewhere, is ultimately about paying a reasonable price for the freedom to pursue chosen economic and social objectives without being unreasonably constrained by threats to the physical supply or real price of energy.(27) In keeping with the general definition of security, energy

security is also a matter of degree i.e. "what constitutes security is relative in concept depending on countries and times."(28)

For the purposes of this thesis, it will be suggested that energy security, is determined by two factors : firstly, the anticipated danger (the degree of which depends on its scale, how often it occurs and how long it lasts) and secondly on the countermeasures set up or taken to deal with this, of which there are two types : one before and one after the danger takes place.(29)

Interdependence and Energy

Energy security is by its very nature transnational in that the energy problem is a global one. The energy system is characterised by high levels of interdependence and, to some extent, centralization. Energy may be placed in a framework of interdependence since, as Choucri suggests, it is the result of many linkages emanating from asymmetries in production and exchanges; vulnerabilities and sensitivities; shared interests between consumers and producers; the costs of pursuing national objectives; and the efforts to increase control over international transactions.(30) In the context of this thesis however, one particular aspect of the interdependence relationship is concentrated upon namely the oil consumers or importers. Furthermore, one set of linkages emanating from the asymmetries of the structure of energy

interdependence will be analysed, that of the potential vulnerabilities and sensitivities.

The asymmetries of energy, particularly oil, are the product of structural and behavioural differences among states which provides a basis for interdependence in energy transfers. As Choucri states:

> "By themselves asymmetries indicate only the initial transactions generated by energy needs but with institutionalized flows they become the basis for defining potential vulnerabilities [and sensitivities]. It is these vulnerabilities that assign political meaning to structural asymmetries in petroleum related transactions and create the initial motivation for the search for policy alternatives",(31) or responses.

Thus, one has to distinguish between the two components of interdependence : sensitivity and vulnerability.

Sensitivity

Sensitivity (or dependency) as conventionally used and as originally defined by Waltz, Keohane and Nye and further refined by Baldwin(32) has two basic meanings : on the one hand, it is used in a causal sense to refer to situations in which an effect is contingent on or conditioned by something else i.e. implying dependence on an uncertain issue or situation. Keohane and Nye refer to this when they state that "dependence means a state of being determined or significantly affected by external forces."(33) On the other hand sensitivity can be used to refer to a relationship of

subordination in which one actor or object is supported by another or has to rely on something else for the fulfillment of a need which could be costly to forego.(34)

Sensitivity thus implies mutual but not equal effects on the states involved. Keohane and Nye argue that sensitivity involves a degree of responsiveness within a framework - how quickly do changes in one state bring costly changes in another? How great are these costly effects? Sensitivity is, therefore, created by interactions within a framework of policies which remain unaltered.(35) The fact that the policies remain unaltered, may reflect the problems of reformulating new policies within a short space of time, or it could reflect a commitment to certain patterns of domestic and international rules. Furthermore, sensitivity, according to Keohane and Nye, can be social, political or economic. It may also mean that the impact of altered circumstances is not too severe.

Baldwin, however, rejects Keohane and Nye's notion of sensitivity.(36) He argues instead that it should be relabelled "mutual sensitivity", in that the concept as formulated by Keohane and Nye, blurs the distinction between "sensitive" and "dependent" or "dependence". Moreover, Waltz suggests that sensitivity as a concept is given more meaning by economists when seen in market terms. To quote Waltz : "The more automatically, the more quickly and the more smoothly factor costs adjust, the slighter the political consequences become."(37) This, however, remains subject to

argument since the market differs quite markedly from sensitivity, as a dimension of interdependence.

Therefore, sensitivity(dependency) may be defined, according to Nye's definition, as being measurable in terms of flows across borders, their responsiveness and their magnitude.(38) With regard to oil, dependency is measured by the level of imports.(39)

Vulnerability

Vulnerability may be defined, according to Nye, as the incursion of "high costs that cannot be escaped without incurring further high costs."(40) For Nye vulnerability is distinct from sensitivity in that it is usually measured not by the level of imports, but by "the costs of interruptions *after* considering the effectiveness and costs of constructing measures to escape the situation."(41) In other words Keohane and Nye argue that it is the cost of disengaging from a specific relationship which constitutes the appropriate requirement and measure of dependence.

If Keohane and Nye's argument is accepted, then one is left with a clear distinction between the two terms : 'sensitivity' and 'vulnerability'. What distinguishes the two terms is the *degree* of costs incurred *after* a crisis or shock situation occurs or after the severing of a relationship. In 'vulnerability's' instance the costs (mainly to an economy) will be potentially much greater because of the higher level

of reliance on imports for a larger section of the economy, whereas the costs incurred in a 'sensitivity' dependent situation will be relatively less. Both 'sensitivity' and 'vulnerability' are to a degree also reliant on the policy instruments and measures available.(42)

With regard to oil, (and equally also to other raw materials), some sensitivity dependence on world prices is inevitable and is a condition which a state accepts. At the same time, a state will insure itself against the effects of an unexpected interruption in supplies by keeping open the availability of multiple sources and stockpiles. In line with the former, and as suggested by Nye :

> "[t]he degree of vulnerability depends not only on the level of imports, but also on the other instruments and policies available. At a given level of oil imports, the State is vulnerable to the extent that the level is too high to be handled by remedial measures (such as stockpiles, additional production and, in an emergency, demand restraint) at modest levels of cost."(43)

In this sense a state does not need to aim for zero oil import levels. Instead it should concentrate on a level of oil imports combined with appropriate levels of stockpiles (and possibly other measures) to overcome possible interruptions and to manage a situation of energy insecurity.

Opportunity Costs

Vulnerability as a concept is both simple and at the same time deceptive. It is simple in that it can be further defined in

terms of the opportunity costs of severing a relationship.(44) A good indication of this is given by Baldwin - if state B must forego warm homes, full employment, adequate transportation systems and high living standards when state A stops exporting oil to it then, it follows that state B is dependent on state A for oil. If, on the other hand, state B can easily get its oil elsewhere or if it is indifferent to warm homes etc, it is not very dependent on state A with regard to oil.(45) The concept of opportunity costs also allows one to view policy alternatives more sensibly. Often in discussions on dependency the dependent actor is portrayed as having no alternatives or as having its alternatives closed off. This however, belies the fact that alternatives are always available. When, for example, it is argued that the United States has no alternative to importing oil what is really meant is that the costs involved in securing alternatives are regarded as unacceptable or unaffordable to the parties involved. From this, it may follow that part of the difference between vulnerability and sensitivity is the availability of alternatives.

It is a deceptive concept in that the opportunity costs and their implications may be easily misunderstood. For example, it is not a phenomenon which exists independently of the value structure of the dependent actor. In this context states are at least partly responsible for their own dependence(46), for example, Western Europe is dependent on Arab oil imports in the sense that forgoing them would involve unacceptable costs to the states concerned. The European states could, for

example, free themselves from this dependence by simply lowering the value they place on operating private vehicles. As such vulnerability is also a function of the amount of trade and of the availability of alternatives.

Sensitivity and vulnerability may also be seen as variables of energy security. Import sensitivity or vulnerability may be regarded as factual terms, which can be measured with statistical tools. For the purposes of this thesis they will be defined as "the volume or percent of domestic consumption supplied from foreign sources, particularly 'unstable'(sic) ones."(47) A state is dependent on imports of items for which it does not have the capacity to produce 100 percent of its own needs. Import sensitivity is, therefore, reflective of the level of imports and the alternatives available. By comparison, import vulnerability represents a greater degree of liability - both economic and political - to change in the availability or price of a commodity upon which a state is reliant.(48) This carries with it far greater implications for a state.

Import Security

The distinction between import sensitivity and vulnerability is a matter of degree. Interdependence in the world economy for goods and services characterises economic life and is generally a healthy situation since the costs involved in self-sufficiency and isolation are too great to be born by any one state. Before 1945 Europe, the United States and Japan

had relied on imported oil to meet their consumption requirements. This, in itself, was not a precarious situation to be in. Nowdays, for example, the United States imports its oil from a geographically diverse number of suppliers, so that the chances of a disruption simultaneously affecting its top suppliers - Mexico, Canada and Venezuela - are minimalised. As a consequence the United States is import sensitive in that is has the availability of alternative sources of supply which will reduce the opportunity costs imposed by supply disruptions and price manipulations. This is, however, dependent on the circumstances in which these occur. Hence the USA is not import vulnerable as its vulnerability is reduced by the diversification of suppliers over a wide geographic area. Western Europe, generally, and the European Community, specifically, by comparison, may be characterised (as will be seen in next chapter) as import vulnerable because their supplies are not spread over a wide geographic area and are instead concentrated in a relatively narrow region - the Persian Gulf. This means that Western Europe has substantially increased the opportunity costs to supply disruptions and price manipulations. A corollary of this is that a state which has a relatively low level of imported oil may, in fact, be more vulnerable than a state with a high level of oil imports, if it relies for most of its supplies on a small number of sources located in an unstable region. The present over-supply situation on world oil markets means that a sizeable disruption in supplies for an import vulnerable state could be made up from other sources. This, however, is only a temporary situation.

Import dependence, which is not dangerous in itself, may be further distinguished from vulnerability, which is, if one assumes that the present over-supply of oil were to be eliminated, either by a rise in world demand or through a decrease in supply availability.(49) A state like the United States would increase its exposure to vulnerability (to outside supply disruptions) simply because the ensuing shock effects in other industrial states would be felt in the US as well, thereby illustrating the interlinkage of world oil markets. Only a small proportion of US oil imports originate from the Persian Gulf compared to those of Western Europe and Japan, but a cut-off of these supplies could have serious consequences for their economy. However, this remains open to debate.

From the above, one may conclude that oil security, as distinct from energy security, comprises a two pronged approach. On the one hand, oil importing states are vulnerable to disruptions in oil supply. Because oil is so vital to the running of industrialised economies, interruptions in the supply of oil could result in disruptions of economic activity and may, in extreme cases, lead to economic strangulation. In other words, this first approach involves protection against the denial of supplies.

It entails, therefore, the reduced reliance on foreign supplies of oil i.e. oil imports, both of which have economic and political aspects to them. The political threat arises

from the leverage suppliers of foreign oil can exert on a state's foreign policy. Two points can be made in this regard : firstly, political leverage exists only because of potential economic harm. For example, the political sensitivity of America's imports is dominated by its economic sensitivity. Secondly, the interruption of oil supplies is a problem which is basically distinct from the issue of cartel monopoly exactions. Intentional interruption is a political act which is unlikely to gain support from all oil exporters. Furthermore, it is a short term action - its effectiveness fades upon inception and finally, it is a threat which can be countered in a number of ways, such as closer consumer-producer relations.

Oil security also involves the avoidance of marked increases in oil prices i.e. it involves protection against the economic threat of unanticipated price changes plus reflows of funds that could destabilise domestic markets but may not necessarily. Marked increases in prices can result in numerous economic problems, including structural adjustment and balance of payments difficulties; increasing inflation; unemployment and economic recession. This is because of oil's pivotal role in economic production and use in industrialised economies. All were seen after the two oil price increases in the 1970s. Such economic difficulties, in turn, can threaten the social and political stability of an industrialised state.(50)

Dependence on oil imports and vulnerability to oil supply disruptions are, thus, two of three energy problems - the third being depletion of world oil resources. Carlsnaes suggests that of these two issues dependence on oil imports is one which, essentially, can only be tackled over a time span of decades, because of its long term nature and the difficulties, technical as well as political, which could arise in securing alternative(safer) supplies. The response to vulnerability, on the other hand, both needs and as well as in practice is amenable to policies which relate to the immediate future.(51) In other words, because of the impact or threat posed by vulnerability it requires strategies and/or emergency regulations to be in place should a crisis occur. Alternatively, the long term depletion of world oil resources requires the development of alternative energy technologies which require lengthy lead times, and whose impact will only be felt over a much longer time span. These three aspects are closely interrelated.

Vulnerability and Threats

Energy security thus reflects a combination of vulnerabilities and sensitivities. In looking at vulnerabilities it is necessary to draw a further distinction between 'vulnerability' *per se* and 'threats', thereby returning to Ullman's definition of security. 'Threats' is not a separate concept in the ordinary sense but one that is normally associated with vulnerability. It also, under Ullman's definition of security, defines and valorises security.

A distinction does exist, however, between threats and vulnerabilities in that, according to Buzan(52), states can reduce their insecurity either by reducing their vulnerability or by preventing or lessening threats. The alternative to this is that increased vulnerability can entail increased threats, depending on the situation and actors or states concerned. Lessened threats, therefore, imply increased security for a state.

Vulnerabilities, as previously explained, can endanger Western economic growth rates and thereby the employment potentials, social stability and standards of living. Alternatively, vulnerabilities may be viewed in military strategic terms, for example, posing a threat to NATO's defence capabilities *vis-á-vis* those of the Warsaw Pact or making it difficult to carry on a limited war. Threats, on the other hand, are more complex, alter in response to new developments, are more ambiguous and vary in intensity depending on the situation.(53) Four types of threats exist to a state's security : economic, political, military and environmental. Of these, the economic threat in relation to oil poses the greatest risk to a state's security because of the pivotal role of petroleum in an economy.(54) This is in line with Ullman's argument that the threats arising from oil dependence are mainly not of a military nature, but tend to be political or economic.

Economic threats are difficult to relate to national security because of the intertwining with economic factors such as risks, competition and uncertainty, thereby making it difficult to distinguish the boundary between which economic issues pose a threat to a state's security and those which are a function of competition. "This means that economic threats tend to be neither swift nor precise in their effect, and at lower levels may easily become indistinguishable from the normal rough-and-tumble of economic practice."(55)

Furthermore, in looking at economic threats it must be borne in mind that it is often difficult to distinguish an economic threat from normal economic activity. An economic threat is borne by a state if, as Buzan suggests, "conscious external actions by others results in material loss" and places a strain on the state's institutions.(56) In comparison with a military attack on a state, an economic attack does not cross a clear boundary between peaceful and aggressive behaviour, since aggressive behaviour is normal in economic conduct. However, what Buzan fails to emphasise in oil's case is that it is a pivotal commodity in an economy and that any attacks on it, either though supply or production, will be seen as a direct threat against the state. In this connection, oil moves from being a threat to being a possible vulnerability.

With regard to oil and threats, specifically, two cases can be identified (57) : the first one includes the linkage between economic factors and military capability. Briefly, at a more specific level, military capability is reliant on the

continued supply of strategic materials and where these are imported then any threats to security of supply can be classified as a national military security concern. An example of this is American military reliance on certain strategic materials such as chromium, manganese and nickel from political unstable regions, in this instance Southern Africa.

The second case is economic threats to domestic stability. This situation occurs when a state pursues an economic policy based on extensive trade in a particular product with the concomitant increase in high levels of dependence. This is necessary in order to sustain the social structure resulting from such new found prosperity. In other words a state becomes locked into a structure of trade thereby increasing its potential vulnerabilities. The supply of oil is the most obvious example. An interruption in the supply of oil could cause economic chaos in states which are dependent on high import levels of oil. Where economic manipulations occur for political reasons, as happened in the early 1970s, then such actions can be interpreted as threats to a state's security.

But, to reiterate an earlier point, oil in most instances, is more than just a threat because of its dominant role as a source of primary energy for industrialised economies, particularly in the transport sectors where it is pre-eminent. This is, though, subject to variation among states.

Conclusion

Security, in general, and energy security, specifically, are complex concepts, dependent on circumstances and the threats facing a state for their definitions. As such they are a matter of perceived degree for states. Energy security, in turn, reflects a combination of vulnerabilities and sensitivities of which oil imports are a significant measure of a state's vulnerability. Both, however, are on-going processes. Total energy security(of supply) will never be attained precisely because of the dynamic nature of security. What does have to be achieved by states is a managed environment of insecurity. This, in turn, is reliant on the resiliency of energy markets and the effectiveness of energy security measures.

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7. *Ibid.* : p3 : This discussion implies that an importer has more than one source of supply.
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CHAPTER 2

OIL IMPORT DEPENDENCE

Oil is the crucial factor in the energy supply of the Western industrialised states. In 1973 it constituted 53 percent of total energy consumption of the OECD states, in 1981 47 percent and in 1988 43 percent, of which approximately 35 percent was imported by OECD members in 1988. In line with this pattern of supply, the European Community(1), before 1974, imported nearly all its crude oil requirements. Since then, it has diversified its supplies considerably and now imports two thirds of its supplies, with oil imports standing in 1988 at 75 percent of oil consumption and 34 percent of energy consumption. These figures, however, are still substantial within an energy security context.(2)

This chapter will attempt to establish the vulnerability or sensitivity of the European Community as a whole. To do this it will be necessary to look at the level of oil imports as an indicator of vulnerability or sensitivity, in comparison to other energy imports and to over-all energy consumption. Furthermore, among other considerations will be that of where do the imports originate from and are these regions politically or militarily unstable. If so, does this necessarily heighten or lessen the threats or

vulnerabilities facing the importing nations? The sectoral use of oil will also be analysed as a variable in import vulnerability. For comparative purposes, the United States, Japan and Western Europe will be referred to. Within the European Community, the United Kingdom, West Germany, Italy, the Netherlands and France have been chosen as examples because they are representative of the various groupings in the EC.(3)

It can be argued that the oil import dependence situation of a state may be assessed in a number of ways(4) : firstly, in relation to levels of total domestic energy consumption; secondly in relation to levels of indigenous production and availability of reserves on its territory; thirdly, in relation to levels of imports from specific regions or a specific state; or, finally, the refining capacity of a state(5).

Nonetheless, no single indicator provides an adequate measure for assessing the oil security situation of a state. This is because of the complexity of domestic and international markets. Rather, a number of indicators could be used to monitor a given situation, ranging from oil prices and excess production capacity through to fuel substitution capability. However, for the purpose of this thesis, it has been decided to concentrate on the level of imports. To analyse this effectively the following four indicators propounded by Deese and Nye(6) will be used : the degree of dependence on foreign sources of energy; the

diversification of oil import sources; the distribution of primary energy resources and the sectoral distribution of oil consumption.(7)

Although the oil importers, as importers, share common problems they differ in economic growth rates, industrial structures, and military strengths etc. In respect to energy security and import dependence, they differ significantly with regard to the four indicators outlined above. These four indicators can be used to measure the extent of import dependence, but they remain only indicators, no single indicator in itself presenting a realistic picture. Nor do these indicators allow one to generalise about Europe's energy security, simply because of the diversity of the European states, their differences in resource endowment, the absence of any underlying consensus on economic philosophy, the existence of competing commercial interests, and differences in historical relations with oil exporters. However, together the indicators allow for comparison.

(a) Foreign Sources of Energy

The first indicator is the degree of dependence on foreign sources of energy and in particular crude oil imports.(See Tables 1,2, and 6 in Appendix A) The EC as a whole imports over 70 percent of its oil consumption requirements, with oil constituting 33 percent of its energy consumption in 1987(See Table 6 - Appendix). Of this, OPEC, in 1988

provided nearly 53 percent and the Gulf states 30 percent of total imports and nearly 57 percent of total OPEC exports to the EC.(See Tables 1 and 2 - Appendix) Western Europe, by comparison, relies on oil imports for 63 percent of its oil consumption and some 27 percent of its energy consumption.

Within Western Europe itself, West Germany has the highest Total Primary Energy Requirement(TPER). It depends heavily on imported energy - some 50 percent of its TPER. This means that West Germany imports over 50 percent of its oil consumed. Forty nine percent of its crude oil is derived from OPEC and nearly 13 percent, in 1988, from the Gulf states(See Table 1 - Appendix). Italy, similarly, is highly dependent on oil. In 1987 oil constituted 59 percent of its TPER and 44 percent of its electricity generation.(8) Along with this has gone an increase in Italy's oil imports and which now constitute 60 percent of its energy consumption and nearly 100 percent of its oil consumption(see Table 6)(9). Because of its high level of oil imports, some 65 percent originate from OPEC states and nearly 36 percent from the Gulf producers.

Other high degrees of oil dependence among EC member states are evident in Denmark, Greece, Portugal and Spain, although the level of dependence varies from state to state. By comparison, oil imports for the United States comprise 40 percent of its total oil consumption, of which, approximately, 53 percent of crude oil imports originated in 1988, from OPEC and 50 percent, of this figure, came from

the Gulf producers.(See Tables 1,2 and 4 - Appendix) A much greater degree of importation exists for Japan - it relies on oil imports for nearly 100 percent of its oil consumption, with 72 percent of total imports derived from OPEC and 58 percent from the Gulf. The Gulf producers provide nearly 81 percent of total OPEC exports to Japan.

With regard to the OECD states, net oil imports in 1987 amounted to 55 percent of oil consumption, reflecting an unchanging figure from 1986. Fifty-six percent of OECD oil imports originated from OPEC states in both 1987 and 1988 and about 30 percent of OECD oil imports in 1987 came from the Gulf region.(10) According to the International Energy Agency, in its 1988 Review(11), for the middle to long term the prospects for growing dependence on imports, particularly from the Middle-East, are considerable and in line with a gradual decrease in OECD oil production. The share of oil in total energy demand (up to 2005) is, however, expected to decline slowly.

(b) Diversification of Oil Import Sources

A second measure of energy security is the diversification of oil import sources (see Tables 1,2,4 and 5 - Appendix). The importance attached to this measure depends on the International Energy Agency's(12) effectiveness; on EC sharing plans which allocate oil supplies in the event of a crisis and on the market forces in raising prices and equalizing supplies during an interruption. Nonetheless,

despite this, the heavy reliance on single sources of oil increases a state's vulnerability to not only cutoffs below 7 percent of the previous years oil consumption(13) but to foreign policy pressures and to price increases. Over 41 percent of Western Europe's oil imports are derived from OPEC with the Gulf contributing over 25 percent of this figure. Western Europe, as a whole, has a heavy reliance on oil imports from a volatile region. As mentioned, the twelve EC members were reliant on OPEC to provide some 52 percent of their crude oil supplies in 1988 and the GCC states to contributed 30 percent. With specific reference to Table 1(See Appendix), Italy is fairly heavily reliant on OPEC to provide a considerable percentage of its crude oil imports. The UK is somewhat less reliant on OPEC and the Gulf producers - indicative of its position as an oil exporter. By comparison, Japan has a high reliance on OPEC and Gulf imports. The Gulf region, particularly Saudi Arabia, UAE and Iran, provide over 60 percent of Japan's oil. The US, on the other hand, relies on OPEC for around 53 percent of its crude oil imports, of which the Gulf exporters comprise 26.9 percent for crude oil and 4.7 percent for total petroleum product imports.

Table 5(See Appendix) reflects an historical view of EC crude oil imports from 1980 to the present. Although the figures differ somewhat from those given by the IEA, they do show that the importance of OPEC imports in general and Gulf imports in particular have diminished significantly since

the late 1970s. However, from 1987 imports from the Gulf region have once again begun to rise.

(c) Distribution of Primary Energy Resources

The distribution of primary energy resources on which a state is reliant constitutes the third measure of energy security. This indicator varies widely among the EC member states and the US and Japan (see Table 7 in Appendix A). The US, Japan, Italy and France, plus most of the smaller European states, rely heavily on oil as their primary commercial fuel, with oil consumption comprising over 40 per cent of primary energy consumption, except in the case of the UK where it was below 38 per cent for 1988. The European Community members relied on oil for over 46 percent (in 1988) of their total primary energy consumption. The table thereby reflects the dominant position of oil in total primary energy consumption - in 1988 among the OECD states it was 42 per cent.(14)

(d) Sectoral Distribution of Oil Consumption

The fourth and final measure of assessing energy security identified by Deese and Nye is that of the sectoral distribution of oil consumption (See Table 3 - Appendix). Oil is required for four primary purposes : transport, manufacturing, heating and, electricity generation. The value of oil used by each of these sectors differs, with the distinction only becoming apparent when supplies fail to meet demand. Thus, those sectors which are deemed to have

higher economic and social values will be granted more oil in order to minimize economic losses. In this respect, transport, as seen below, will remain a priority sector. This trend is reflected in the ever increasing world wide demand for oil, especially for transportation, which will continue to remain the most dominant sector for oil. In fact, the IEA views with concern this trend particularly as there is, for the medium term no viable alternative to oil available.

In view of the aforementioned, oil as a percentage of sector consumption of energy is extremely high in the EC, Japan and the US for transportation - averaging around 99 per cent. It is vital to modern industrialised economies, not only for the efficient and smooth functioning of industry, but for defence as well as communications. Industry is the second major sector which is heavily reliant on oil - varying from 23-47 percent of sector consumption of energy. With reference to Table 3(See Appendix), the residential, commercial and agricultural sectors are fairly dependent on oil, particularly agricultural and residential and for heating. The electricity sector(although no figures are given) is the least reliant because of the use of coal and nuclear power in the generation of electricity, coupled with the availability of fuel-switching present in a number of power stations.

Another factor which is relevant to the above, is that of the adaptability of industry, especially in key sectors, to

energy shortages. This is obviously a key to the overall vulnerability of an economy in the event of a supply disruption. In the manufacturing sector, for example, some industries are more vulnerable than others. A company's reliance (and hence probable vulnerability) depends on whether it uses oil as a direct feed stock, as in chemicals; for process-heating, as in glass; or for space heating, as seen in the engineering or assembly plants.(15)

A number of conclusions can, therefore, be drawn : firstly, that of oil's predominate role. It has a near total monopoly in the transport sector, besides providing the largest share of primary energy consumption. It also plays a significant part in the residential, commercial and agricultural sectors, industry and electricity. In other words, the EC member states in particular, and the OECD/IEA states, in general, are reliant on oil to provide a substantial part of their energy requirements.

Secondly, the EC is a major consumer of oil - consuming some 29 percent of the OECD's oil consumption in 1988 *vis-a-vis* 46 percent for the US and 12 percent for Japan. EC inland consumption of crude petroleum in 1986 amounted to 476.7 mtoe compared to 687.2 mtoe for the USA and 180.5 mtoe for Japan.(16)

Following on from this, it may be concluded that the EC is reliant for a substantial level of its oil consumption on imports. It has a relatively high level of imports in

comparison to the US or Japan. This means that, as discussed in the previous chapter, the EC is vulnerable to disruptions in its oil supply. Since 1973 its oil imports have fallen significantly which reveals a decline in the degree of dependence. But even though this decline has been marked, the EC member states are still dependent on a high level of oil imports from unstable sources i.e. the Middle-East to meet their requirements. This is in comparison to the United States, in particular, and other OECD member states. The Middle-East and the Gulf states continue to play a crucial role in supplying EC member states with oil. This means that despite some progress made by EC states, they remain tied to that region.

The aforementioned begs the question about how vulnerable Western Europe, particularly the EC member states would be to a cut in supplies and the attendant price shocks? The answer to this would depend on three related factors which Hogan and Mossavar-Rahmani have put forward.(17)

(a) Probability of Disruptions

The first factor is the probability of disruptions. The two main characteristics of this are the size and the duration of a disruption. For the purpose of this discussion, disruptions can be classified as minor (a disruption of approximately 1 million bpd(net) lasting one month), or major (a disruption of approximately (or more than) 4 million bpd(net) lasting six months)(7). In reality,

however, the size of a disruption will be determined by the extent of an oil consumer's economy and the percentage consumption of oil thereof. The magnitude of the disruption will also depend on the availability of excess production in the market. This will ultimately determine the final outcome of the disruption and its possible impact. With the international oil markets as they are at present, awash with excess oil production availability, the impact of a large shortfall would be minimal. Supplies could easily be made up from elsewhere, without necessarily triggering off a price run. In a tight market(18), however, even a small shortfall could have considerable repercussions.

Thus, for the present and possibly next five years, the European Community is unlikely to experience a major disruption or even arguably a minor one. This is because of the current situation on world oil markets which can be attributed to three factors. Firstly in 1979 world excess production availability stood at only 3-4 million bpd, while in 1987 it stood at 10 million bpd(approximately)(19). Moreover, in 1979 Saudi Arabia's output accounted for nearly 19 percent of the non-communist production versus over 11 percent in 1988.(20) In 1979 less than 1 million bpd of Gulf oil moved via routes other than the Straits of Hormuz, while today nearly 4 million bpd of capacity is available to move Gulf oil via pipelines through Turkey to the Mediterranean sea and through Saudi Arabia to the Red Sea. Once further pipelines have been completed the capacity of

alternate routes will be raised by some 6 million to 7 million bpd by 1990.(21)

Secondly, elsewhere other than the Gulf region, production has also increased. In Mexico production has risen from around 1.5 million bpd in 1979 to about 2.8 million bpd in 1988. North Sea production has risen from about 2.0 million bpd to about 3.5 million bpd and non-OPEC production has also risen in certain areas, notably Latin America(Brazil, Colombia and Ecuador), Asia(India, Malaysia and Australia) and China and the USSR. Overall production levels with the exception of OPEC members, show a continuing decline. Meanwhile, the levels of strategic stockpiles, both commercial and government for OECD members, have increased substantially. They now stand at 3.2 billion barrels, their highest level since 1982, and are sufficient to cover 99 days consumption.(22) Japan has stocks for 150 days.(See Table 10 - Appendix)

Finally, refineries in the United States and other industrial countries have increased their sophistication to the point whereby their ability to shift quickly to alternative sources of supply in the advent of a crisis has been greatly enhanced. The net effect of these changes has been to reduce the current probability of a large supply interruption. However, this is only a short term condition and one, which in all likelihood will alter in 5 years as markets tighten and demand catches up with, and possibly

outstrips, supply. These three factors are, moreover, only short to medium term ones.

(b) Price Impact

The second related factor in assessing vulnerability is that of price impact and overall costs. "As worldwide demand continues to climb faster than the rate of growth of worldwide production capacity, the disruption margin or tolerance level falls off so that smaller and shorter-lived disruptions create potentially larger price and macroeconomic disturbances, all things being equal."(23) This is what occurred in the 1970s with small supply disruptions of a limited duration. The costs to the industrialised economies of the two shortfalls in the 1970s led to a loss of about 5 percent of OECD real income in 1980 and close to 8 percent in 1981.(24) These were, however, delayed costs - the result of the small shortfall between 1978-1979 in OPEC production, combined with stock movements which procyclically accentuated pressure on supplies. This combination of factors were sufficient to cause a second oil price rise. These economic costs, moreover, do not take into consideration the less evident political costs such as the weakening of the fabric of international co-operation. "Ultimately, the price impact is the key factor in assessing the damage of supply interruptions."(25) Thus, the focus of energy policies should be on mitigating the price change.

(c) Policy Responses

The final factor identified by Hogan and Mossavar-Rahmani in assessing the vulnerability of industrialised states is that of policy responses and instruments. They identify four types of market conditions which would or would not require appropriate intervention by governments and companies.(26) The first type of condition can be labelled a "crisis". Ideally this entails a major supply disruption and a concurrent price impact of some magnitude. Such a "crisis", to date, has not been inflicted on the oil markets. The 1973-74 and 1978-79 crises were in fact considerably less in their magnitude than a "crisis", as defined by Hogan and Mossavar-Rahmani, would be, mainly because the actions by OPEC and the Iranians, respectively, did not result in the sustained withdrawal of large volumes of oil from the market. The reductions in supplies were offset by increased production from other sources. This does not imply that a major disruption cannot occur in the future.

The second type of condition is described as a "slump" which involves a smaller price shock, following on after a major disruption. A "shock" constitutes the third condition. It usually involves a minor disruption, but with a consequent large price run-up. The two crises of the 1970s are good examples of this. The final market condition can be identified as a "bump" and involves a minor disruption with a small price impact. The start of the Iran-Iraq war in

1980 provides an example of this, in that it led to a minor disruption in oil supplies and a resulting price run-up.

The relevancy of these four conditions for energy security, lies not in the magnitude of the disruption but in the resulting price shocks. The "bump" and "slump" conditions are, thus, not as applicable, as the price changes associated with these vary only between $2 to $3 per barrel, and can be classified as part of the volatility of the oil markets and as responses to other market forces. These two types of conditions may be regulated by the markets themselves.

The "crisis" and "shock" conditions are the ones that matter, particularly for the European Community. Of the two conditions the "shock" is the most likely and the one which, even though it is of a smaller magnitude, carries with it a significant price impact. Hogan and Mossavar-Rahmani suggest it is to "shocks" that the focus of a state's energy security policy planning should be directed.(27) However, this attitude is possibly indicative of reactive rather than anticipatory planning when it comes to policy formulation, as it is based on past conditions which have influenced market and governmental decisions. That is not to rule out the probability of a "crisis" occurring despite the actuality of this being significantly less than that of a "shock" occurring.(28)

Despite this, the policy instruments required for a "shock" are also appropriate for a "crisis" and involve, briefly, short term and longer term instruments. The short term instruments are those designed to cope with disruptions once they occur and include share allocation schemes, fuel switching, stockpiles etc. Possible military action can also be included as a short term option. The longer term measures are aimed at reducing vulnerability to price shocks and to reducing dependence. They include such measures as constraining demand growth and the encouragement of greater indigenous production.

In the case of the European Community, the present situation on the oil markets rules out the possibility in the near future of either a "crisis" or "shock" occurring. This does not mean to say that the probability of such a condition occurring, in the medium term, is diminished. Any number of collusion of factors could result in either a "crisis" or "shock" happening.

Growing Imports

In view of the fact that the EC is vulnerable to disruptions in its supply, the question can be asked, as it is by Yergin(29), of whether growing imports (i.e. an increase in net imports to consumption - as now being witnessed in the EC) necessarily make a state more vulnerable? In the US Department of Energy Report of March 1987 it is pointed out that the import level of oil can be used as a "shorthand

indicator of oil vulnerability"(30). But the report also argues, that this can be an oversimplification of the situation. It argues that :

> "Certainly, the level of vulnerability depends on the likelihood of supply disruptions and on the ability to respond to such events as well as on the level of dependence on imports. In addition, using import levels as the only criterion for a successful energy policy overlooks the obvious economic fact that the availability of lower cost oil imports brings down the effective domestic price of oil - which benefits all consumers."(31)

With reference to the United States, one may further argue that oil is only part of the total US energy mix. A point which applies equally to Western Europe and the EC. At current rates of consumption, oil imports account for some 16 percent of total energy demand in the US, explaining, in part, why it is over 80 percent self-sufficient in energy. Should oil imports rise to over 50 or 60 percent of total energy consumption, the US will still be close to 75 percent self-sufficient in meeting its total energy needs.(32) However, this apparent security is undermined by one important detail - there exists no quick and ready substitutes for oil in the transportation sector. A situation which carries with it equal implications for Western Europe and Japan.

Within the United States oil imports have been rising since the 1986 price collapse and in the first half of 1988 averaged 6 million bpd - the same level as in 1973 and, now, are equivalent to 36 percent of total oil consumption.(33) It appears, moreover, that US oil imports will continue to

rise because of growing demand and falling US production.(34) But, as discussed, whether they will make the US more vulnerable is a debatable point. One has to consider oil imports in a larger economic context, in that one of the reasons why they are rising in the US is because imported oil is cheaper than the cost of developing new domestic oil production. Competitive and economic benefits exist for a state relying on less expensive foreign oil rather than on relatively costly domestic supplies.

Furthermore, the United State's energy problem is a global one. Because the US consumes over one-quarter of the world's oil production, the consumption trends and fluctuations in the US market have a tremendous impact on the world oil market. "US domestic policies can tip the scale toward either stability or instability."(35) The energy market's volatility has, moreover, been increased by the Reagan and Bush administrations' reliance on the market to regulate itself. This has exacerbated fluctuations in production, consumption, imports and prices, resulting in instability on the markets, which has been further aggravated by a general international overreliance on unregulated market mechanisms.

Alternatively, one may see rising imports as implying a growing reliance on OPEC oil, particularly from the Persian Gulf. This is because of three factors(36) : firstly, if the United States and other states continue to import more oil between now and 1995, production is predicted to rise in

OPEC and, in particular, in the Gulf states. This, it is argued, is because of the large oil resources and the low oil costs encountered in this region. Added to this is the fact that the Persian Gulf and other OPEC producers account for nearly all of the world's surplus oil production capacity. Most non-OPEC producers produce as close to capacity as possible, whereas the OPEC states have attempted to restrain their production below capacity in order to support higher prices. This is a policy which has not met with much success in recent years. OPEC thus has about 10 million bpd of surplus production capacity that can be quickly brought into use as demand begins to pick up for OPEC oil. Sixty percent of this capacity lies in the Gulf region.

Secondly, the OPEC share of the Non-Communist World's oil production rose from 50 percent in 1960 to more than 60 percent in the 1970s before declining below 40 percent in 1985 and for 1988 stood at nearly 46 percent.(37) By 1995 this figure is expected to have increased to between 50 and 60 percent with the Gulf's share projected to be between 30 to 45 percent.(38)

Finally, although worldwide dependence on Persian Gulf and other OPEC suppliers may rise to levels similar to those experienced in the 1970s, this does not necessarily imply similar levels of vulnerability. The United States and other OECD consumers now hold strategic stocks, which currently exceed those levels laid down in the IEA

guidelines and which are expected to exceed 1 billion barrels of drawdown capacity in the mid-1990s.(39)

In view of the above one may suggest that the answer to whether increased oil imports, in the forseeable future, will make a state more vulnerable will depend on a number of factors : on the type of suppliers; the availability of alternative sources of supply; the present state of oil markets; and the rate of world demand for oil. It will also depend upon the probability of a supply disruption (what sort of magnitude and the ensuing effects); the ability to absorb a supply shock and the quality of crisis management and instruments to hand. In other words, it will depend on the situation prevailing at a given time.

But the crucial aspect about imports is how they fit into the global context. Essentially there exists, according to Yergin, only one world market for oil and the disruptions and shocks in supplies from a given region or state will reverberate throughout the market and affect all consumers equally.(40) Furthermore, as mentioned previously, a rising level of US oil imports will increase the vulnerability of the overall market - in that it will help to tighten the market. Thus, rapidly rising American oil imports will not only erode the security margin, but will also destabilise the market.(41)

The above will apply equally to Western Europe and to Japan. However, unlike the United States, Western Europe has not

yet shown such a consistent increase, overall, in its oil imports since 1986 and thus is not, arguably, in danger of eroding the security margin of the world oil market.

What threat, therefore, does a high level of oil imports pose to a nation? Does it necessarily heighten or lessen the threats or vulnerabilities facing an importing state? It appears from the aforementioned, and from looking at the sectoral distribution of oil consumption, that in the cases of Western Europe, Japan and the United States vulnerability (to disruptions in foreign sources of supply), can endanger economic growth rates and thereby employment levels, social stability, standards of living and all other factors associated with Western economies i.e. national economic security. In other words, in an economic sense a high level of imports, will pose a grave danger to a state's economy. However, as mentioned previously, the heightening or lessening of this threat will depend on a number of factors including the availability of alternative sources and of alternative suppliers; the ability of an economy (and industries) to adapt to altered circumstances in supply; the level of available stocks; the development of indigenous production etc.

One may take this argument further by suggesting that economic growth in democratic societies plays a central role in providing a secure and stable environment. Russett(42), for example, argues the case that industrial development, as experienced since 1945 (an unprecedented era of sustained

economic growth, high levels of material well-being and substantial equality of economic benefits both between and within OECD states), is essential to the survival of a state, particularly so in a world where military power is dependent far less on a large population than on the base of modern industrial capacity and sophistication. As a result, all industrial powers have to maintain growing economies, and continued access to raw materials is vital for this. Failure implies lagging in the industrial and technological base necessary to sustain military power. Without the evolution of the technology needed for sophisticated weaponry and an expanding economic surplus to support a large military establishment, a state's position within the international sphere of influence declines and even atrophies. However, is this relevant in today's world? For certain aspects of this argument, a strong economy is essential for maintaining military power. But, military power is not the only aspect of a state's influence in the international sphere. Economic power is just as important - if not more so - than perceived military power and influence.

Furthermore, in another aspect to this argument, denial of access to oil and other raw materials may also bring with it the risk of overthrow from within. Advanced industrial democratic governments are based on rising growth rates and incomes. Prolonged economic stagnation and a decline in growth (and hence in a population's income) may bring with

it political dissent for the government in power. Arguably :

> "If continued stagnation or economic decline is politically intolerable, then every threat of denial of access to essential supplies of raw materials becomes a matter of central concern to the state."(43)

This argument applies to democratic states, in particular. The denial of oil may thus form part of a governments national security agenda, as it becomes a security issue of some importance.

Although this is a somewhat generalised view of the situation, the denial of oil carries with it integral political, economic and military risks. Furthermore given the nature of economic interdependence, economic impacts in one region and even in one state, are likely to affect other regions and other states. The vulnerability of the EC and Western economies (where relevant) also has implications for the West's defence structures and alliances, particularly NATO.

Therefore, one may suggest that Western Europe and the EC in particular, are vulnerable to interruptions in their supplies of oil. This is mainly because of firstly, the substantial role OPEC and the Gulf producers continue to play in supplying its oil requirements and secondly, because of the substantial impact oil has on a state's economy. OPEC, although it has lost some of its former political power, nevertheless, still retains some political power and once the oil markets begin to tighten in the 1990s (as

inevitably they will) so OPEC will possibly regain some of its economic clout - though never to the extent of the 1970s.

Moreover, added to this, is the fact that the Gulf region is politically unstable and volatile.(44) It is often assumed that oil disruptions from the Persian Gulf are the outcome of manoeuvring on OPEC's part when this is clearly not the case as seen in 1979 and 1981 where the oil price rises were clearly the result of external events (the fall of the Shah of Iran and the Iran-Iraq war) combined with panic buying on the spot markets. Despite this, as Carlsnaes points out(45), a cursory examination of this region will reveal why it is constantly vulnerable to a whole range of political disturbances, military adventures or other mishaps. Over the past three decades, the Persian Gulf has been subject to a number of wars, revolutions, assassinations and territorial disputes.

The high disruption risks of this area can, furthermore, be classified according to Carlsnaes as follows(46) : firstly, the instability of the Northern Tier; secondly, internal political instabilities in Saudi Arabia, the Emirates and Qatar; thirdly, the possible downfall of the present Saudi regime, followed by those of the Emirates and Qatar; fourthly, various forms of new embargoes in connection with the Arab-Israeli dispute; fifthly, resource management strategies on the part of the major producers aimed at slowing down the rapid depletion of existing oil reserves;

sixthly, shipping disruptions due to superpower conflicts or interventions and finally, technical accidents to major oil producing facilities, for example as has recently recurred in the North Sea. With regard to the above, instability does not necessarily entail a disruption in supplies. The Iran- Iraq war is a case in point where both sides continued to produce oil despite being at war. Although, there did occur an initial loss in production at the beginning of the war. As the war progressed so production was increased in order to generate income to finance the war. All indications point to the fact that Iran and Iraq will continue producing oil at high levels, despite a ceasefire being in force. What is more threatening is the *potential* for disruption which still exists in this area and the element of uncertainty it introduces into an importer-exporter relationship. Three disruptions since 1973 serve to illustrate the potential for a cut in supplies.(47) Accidents as well as politically motivated incidents may cause similar crises in the future. The disruption potential is of course smaller in an over-supply situation than in a barely balanced market.(48)

Added to the instabilities and security implications inherent in a high level of oil imports are two further factors : firstly, dependence on imported oil can only be reduced gradually. It is a long term process involving the exploration and development of new oil reserves and the bringing of them into production. It can also involve the development (and acceptance) of alternative energy sources.

Whatever the resources available the whole process is a costly and prolonged one. Secondly, it is not possible to reduce the level of energy consumption without retarding or halting overall economic growth in the long term. As a rule, as economic growth increases so does overall energy consumption.

As for the future, IEA projections for the next ten years show oil use declining in industry and residential/commercial sectors but continuing its monopoly in the transportation sector. One can also conclude that for the future, industrialised states will remain dependent on oil imports. It is an inevitable result of the structure of the market, production and available proven reserves. Moreover, differences will persist among and between the industrialised states of the EC over both the level of imports and the vulnerabilities or sensitivities experienced by them. For the 1990s energy demand is thus likely to remain at the same level or to grow only at very modest rates, in the event of an economic revival. The probability is that imports will remain more or less constant over the long term. Nevertheless, this view is subject to external factors and because of the very unpredictable and volatile nature of the energy markets it is nigh impossible to predict with any degree of certainty any likely future scenarios.

In conclusion Western Europe, in general, and the European Community, specifically, can be classified under

vulnerability dependence as defined in the previous chapter. They are vulnerable because of their high levels of imports from foreign or unstable sources and because of the potential costs which could be incurred should a crisis or shock occur - not only economically (where the greatest impact would be) but politically and socially thereby revealing the emotive aspect of vulnerability. Vulnerability is a precondition, one may suggest, of the West's high standards of living and a major factor in the sophisticated nature of their economies. They are vulnerable in that they are reliant for 25 per cent, or over of their oil imports from either OPEC members or from the Gulf, both of which could be described as unstable sources. However, for that vulnerability "to transform itself into an actual 'threat' very sinister political assumptions must be made, so sinister that we come very close to a situation of actual warfare or preparations for warfare."(49) In light of this, planning for just such contingencies, particularly stockpiles and energy policies would appear justified.

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1. Here after referred to as the EC.
2. EUROSTAT (1989) : Energy Statistical Yearbook 1987 : OOPEC, Luxembourg : See also Tables 3, 6 and 7 in the Appendix for additional statistics.
3. The UK and the Netherlands are the energy exporters in the EC; West Germany has a high level of imports but not as high as Italy. France is not a member of of the IEA and is one of the major powers in the EC.
4. SPIRI Monograph (1974?) : Oil and Security : Humanities Press, New York : p40
5. A corollary to this is that a sufficient supply of crude oil will be of little benefit if there exists only a low refining capacity in a state while a heavy investment in the refining industry is not sufficient to guarantee the continued availability of crude oil supplies.
6. See DEESE D A & NYE S J (ed) (1981) : Energy and Security : Ballinger, Cambridge MA : p190
7. A fifth factor is the differences in government energy policies which, at this stage and as stated earlier on, will be dealt with in the second section of the thesis.
8. INTERNATIONAL ENERGY AGENCY (1989) : Energy Policies and Programmes of IEA Countries : 1988 Review : IEA/OECD, Paris : p299
9. In 1987 Italy's oil demand grew by 4.4 per cent with a concomitant increase in net oil imports by over 6 per cent. *Ibid.* : p299
10. INTERNATIONAL ENERGY AGENCY (1989) : *op. cit.* : p24
11. *Ibid.* : p14
12. Hereafter referred to as the IEA.
13. DEESE D A & NYE S J (ed) (1981) : *op. cit.* : p190
    The oil-sharing formula of the IEA is based on the following : that if one or more members suffer a supply cut of 7 percent of more of the previous year's oil consumption, then all would have to reduce their own oil consumption by 7 percent and co-operate in reallocating available imports. Should the supply cut-off be 12 percent, then they were all to reduce consumption by 10 percent and also to use reserve oil stocks. Losses of more than 12 percent would be dealt with by implementing further (agreed upon) demand restraint measures.
    The 7 percent cut off level was agreed on in the IEA agreement by the members - in that in the event of a shortfall in supplies affecting any or all partici-

pating states, the oil sharing scheme would be automatically activated unless member states decided otherwise by a special majority.

14. INTERNATIONAL ENERGY AGENCY (1989) : *op. cit.* : p22
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17. HOGAN W W & MOSSAVAR-RAHMANI B (1987) : Energy Security Revisited : Harvard International Energy Studies No 2 : Harvard, Cambridge MA : p10-13
18. By this is meant a tight balance between supply and demand i.e. no excess production
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25. HOGAN W W & MOSSAVAR-RAHMANI B (1987) : *op.cit.* : p11
26. It should be borne in mind that some market conditions, in the event of a crisis, require no intervention while others are beyond the bounds of energy policy analysis.
27. HOGAN W W & MOSSAVAR-RAHMANI R (1987) : *op.cit.* : p13
28. This idea will be dealt with in greater detail in Chapter 7.
29. YERGIN D (1988) : Energy Security in the 1990s : Foreign Affairs, Vol 67 No 1 Fall 1988 : p126
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31. *Ibid.* : p33
32. YERGIN D (1988) : *op.cit.* : p126
33. *Ibid.* : p125 : Imports in 1988 stood at 331.6 mtoe or some 42 percent of total oil consumption.
34. Should current trends continue in the US, then Yergin argues that sometime in the 1990s, the US will cross the "continental divide" and become dependent on imports for more than 50 percent of its total oil consumption. See YERGIN D (1988) : *op.cit.* : p126
35. RENNER M G (1987) : Shaping America's Energy

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36. US SENATE : ENERGY SECURITY HEARING (1987) : *op. cit.* : p37
37. *Ibid.* : p37 and BP Statistical Review of World Energy : July 1989 : p4
    The actual figure for this is 45.81 percent based on production figures.
38. *Ibid.* : p37
39. In addition greater capacity to switch fuels now exists and policies such as price and allocation controls, which were pursued in the 1970s, have been scraped. This, however, does not imply complete security from oil disruptions nor does it imply that an economy is no longer vulnerable.
40. See YERGIN D (1988) : *op. cit.* : p127
41. *Ibid.* : p127
42. RUSSETT B (1982) : Security and the Resources Scramble : Will 1984 be like 1914? : International Affairs Vol 58 No1 982 : p43
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44. This a debatable though - but it does display as much volatility as any other developing region.
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47. The Yom Kippur war, the Iranian Revolution and the Iran-Iraq war.
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SECTION II

THE EUROPEAN COMMUNITIES

CHAPTER 3

EC ENERGY POLICY : ITS EVOLUTION 1945-1975

The concept of an 'energy policy' is a relatively new phenomenon to the European Communities. Prior to 1957 no provision was made for it either in the Treaty establishing the European Economic Community or the Treaty establishing the European Atomic Energy Community (Euratom), despite the treaties being concerned with various aspects of the energy sector, and the first Community, the European Coal and Steel Community (ECSC) being explicitly focused upon a key energy resource. It was only with the memorandum of June 1963, adopted by a working party on energy, that a move was made towards providing the first outline of a real energy policy for the Community. From then on the momentum towards finding, formulating and implementing a common energy policy acceptable to all member states gained speed. The two major oil shocks of the 1970s were the main external contributing factor in this process. Moreover, the evolution of an EC

energy policy has to be seen as a significant means to ensuring energy security and equally, given the EC's vulnerability, to reducing this.

The development of a Community policy on oil has to be seen against the background of the secular trend of a declining use of coal and an increasing use of oil. This trend influenced the development of energy policies within the Community. Prior to 1945 the European states had always had access to abundant energy (and oil), either domestically or in the control of overseas sources through their colonies or controlling interests. Briefly, after 1945, the situation with regard to oil altered considerably as demand for oil increased (along with high economic growth rates) and demand for coal declined as it became uncompetitive. Between 1950 and 1970 world wide consumption and production of energy grew at an annual rate of 4.2 percent from 31 million bpd in 1950 to 73 million bpd in 1970(1). Of this, oil and natural gas accounted for the greatest expansion so that by 1970 oil consumption stood at some 46 million bpd. The Nine EC member states had a combined energy consumption of some 968.5 mtoe by 1973.(2) Along with the boom in energy went changes in the pattern of supply. In 1945 the future EC members' requirements were met primarily by solid fuels (coal and lignite) with oil only forming 10 percent of the total.(3) By 1973, however, solid fuels only accounted for 23 percent and oil 59 percent of their total energy requirements.(4)

The changing patterns of energy (and oil) consumption in the EC were accompanied by changes in the ratio between energy produced domestically and that imported. Between 1960 and 1970 total imports of oil from sources outside of Europe, principally the Middle-East and OPEC producers, continued to increase each year(See Table 6 - Appendix). The main reason behind this was the comparative cheapness of oil as against other major energy sources, mainly coal whose overhead and production costs, in this decade continued to increase, making it, in most instances, an unviable alternative to oil. Therefore, from an overall perspective, the period up to 1970 saw oil becoming not only the most important commodity in world trade, but the EC's principle energy source.

In 1950, therefore, oil had only played a minor role in the energy needs of European states, with coal constituting 75 percent of total energy supply. Against such a background, the European Coal and Steel Community Treaty, signed in Paris in 1951, could have been regarded as making adequate provision, as it stood, for the existing energy problems of the six members. The Euratom Treaty of 1957, dealing as it did with atomic energy, made provision for future needs, in which nuclear energy was expected to gradually take the place of existing forms of energy. Under such conditions, "the authors of the Community Treaties apparently saw no need to provide expressly for the adoption of a common policy on oil."(5)

It was only at the 1956 Messina Conference, which was so crucial to the formation of the EEC and Euratom, that the ECSC High Authority was called upon to draw up proposals which subsequently led to the introduction of the Protocol of 8 October 1957 on a co-ordinated energy policy.(6) This was to involve co-operation between the forthcoming Commissions of Euratom and the EEC and the existing High Authority of the ECSC. Prior to this, Europe's vulnerability (to interruptions in the supply of the oil component of its energy needs) was foreshadowed by the October 1956 Suez War, when the Suez Canal was temporarily closed. As a result of this experience the Organisation for European Economic Co-operation (OEEC) set up a Petroleum Emergency Group which encompassed representatives of West European Governments, the OEEC and oil companies, who met to arrange a reserve pool for oil. This arrangement allowed some sharing of oil with those members facing supply problems.(7) The ECSC Protocol of 1957 resulted in the establishment of a Joint Committee, comprising representatives of the six governments and the High Authority of the ECSC, which was to examine the prospects, and conditions required, for economic growth and expansion in the consumption of the various forms of energy.(8)

Once the EEC and Euratom had been established in Brussels, a combined Working Party was established.(9) In April 1962 the Ministers of the Six called for a comprehensive examination of the problems posed by oil. This was in line with the increasing consumption of oil in the Community,

which had risen from 65 mtoe per annum in 1955 to 142 mtoe in 1962 (10), reflecting oil's importance in the total energy supply.

However, the first Working Party was not a success, mainly because a real agreement on long term energy policy was not reached. Despite this, and in response to the call from the Six Ministers of the member states, a memorandum was produced by the Inter-Executive Group in June 1962.(11) This represented the first real steps towards constituting a common energy policy.

The memorandum included provisions on the free circulation of energy within the Community; the diversification of supplies; aid to Community production(mainly coal); the development of nuclear energy, storage, taxation and import regulations. The diversification of sources of supply and the stockpiling policies were designed to increase security of supply without distorting the oil market, while the development of nuclear energy was regarded as providing an alternative energy source to oil. The basic objective of the proposals, contained in the memorandum, was the establishment of a common market in energy. This entails the free trading of energy in a competitive market. But, at that stage, oil imports constituted a significant proportion of oil consumption requirements. Therefore, in addition to the aforementioned proposals, it was proposed that investments in energy other than oil be encouraged to meet growing energy demand. If the proposals had been

implemented they would possibly have given the Community a secure supply of oil at the lowest possible price in the prevailing circumstances.

The above mentioned proposals were agreed by the ECSC Special Council of Ministers in the Protocol of Agreement in Luxembourg on 21 April 1964(12). Arguably, a further reason for the Protocol appearing in 1964 was the insistence of the Germans, in 1963, upon a draft agreement to create conditions conducive to a common energy market.(13) The Protocol was the first energy policy instrument to be agreed to by the governments of the member states. It espoused the broad objectives of cheap and secure supplies of energy, freedom of choice for consumers and fair competition among energy sources.

Ensconced in the Protocol was the principle that no decision on the basic options of an energy policy should be taken before a single Community was established(14). In the meantime, it was decided that national energy policies should be harmonised in preparation for the creation of a common energy market.

Over the twin issues of oil and natural gas, (under the Protocol), the governments undertook to implement a common policy under the Treaty of Rome.(15) They hoped to guarantee highly diversified supplies at the lowest, most stable prices possible, while providing, at the same time, arrangements capable of adaption to suit the circumstances

if and when they arose.(16) Similar arrangements were proposed for coal and nuclear energy.(17) However, these vague guidelines for energy policy contained one significant contradiction : energy supplies, at that time, could not be secure *and* cheap. "Either security of supply would be given priority through enhanced support of European coal production - at relatively high prices, or cheap foreign supplies (especially oil) would become increasingly dominant, thus leaving Europe vulnerable to interruption(s) of supply."(18) The Protocol, on the other hand, did leave provision for state subsidies of coal, but it made no room for a shared Community finance scheme(for coal) nor did it provide for specific production targets. In its basic form, the ECSC opted for a policy of cheap fuel at the expense of longer term considerations.

As it stood the Protocol only laid the foundations for a common energy policy. Thereafter it would be left to the High Authority and the two Commissions to co-operate with the member states' governments in order to work out what course of action to take to achieve the objectives for each form of energy.(19) This was, therefore, only the first step in the evolution of a common energy policy.

Second Stage

The second stage in the formulation of an EC energy policy dates from 1966 to 1968. On 16 February 1966 the Council of the European Economic Community was sent its first

memorandum by the Commission on Community policy for petroleum and natural gas.(20) The general policy outlines contained in this memorandum reaffirmed the 1964 objectives of cheap and secure supply, freedom of choice and fair competition among the various energy sources. However, the guidelines contained in the 1966 Report went somewhat further than those of 1964 in that it contained specific and detailed proposals.

With regard to oil(21) the stated objective was "to harmonise progressively the trade policies of the Member States so that conditions by the end of the transition period (1970) will be right for implementing a common policy."(22) This was to include inter alia : the granting of tax relief for prospecting by companies; closer working relations with oil companies(23); continued negotiations with non-member states (especially the United States and the United Kingdom) in order to consider what measures to take in the event of an emergency over supplies; diversification of resources and; harmonisation of commercial policies (this applied specifically to imports). These are the major points of the memorandum.(24) Additionally, the Commission sought diversification of oil import sources; improvements in data collection and forecasting; the establishment of a common market for energy (by removing non-tariff and tax barriers within the EC) and; the creation of oil stocks. However, the main thrust of the 1966 Memorandum was directed at the French petroleum market which, since 1928,had been strictly regulated under the law of that period (a

reflection of the French response to the international oil markets of the twenties). "The Commission wanted the discriminatory parts of the law modified, but the French refused to do this."(25)

It can be suggested that, in its primary form, this first memorandum to the Council was an anticipatory move by the Commission. The Commission recognised that :

> "[i]n the future the problem of security of supplies will be even more acute than it is today, as petroleum comes to take a larger share in the Community's energy supply."(26)

It also recognised the main problem facing it would be to ensure that :

> "...the three factors which make for security - existence of adequate stocks, availability of production capacities, and diversification of sources - are maintained or reinforced in order to obviate the risks of a supply crisis or of oil price increases."(27)

However, it overlooked, yet again, the fact that despite the conditions prevailing at that stage, cheap and secure supplies could not be guaranteed for the future. It lacked, in this regard, sufficient vision or recognition of the long term considerations (and problems) inherent in supplying safe and adequate energy stocks particularly oil.

In 1967 the EEC, ECSC and Euratom executives were merged and by 18 December of that year the new Commission sent its first communication to the Council of the European Communities - entitled "First Guidelines for a Community energy policy."(28) The thinking behind this communication

was influenced by a number of factors : the outbreak of war in June 1967 in the Middle-East and the consequent disruption of Community oil supplies, and the increasing dependence of the Community on oil, particularly oil imports from the Middle-East bringing security considerations to the fore.

This communication is a seminal document on Community energy policy. For the first time the Commission, due to the merger of the three Community executives, was able to formulate a "general concept of energy policy based on an overall rather than a sectoral assessment of the Community energy market."(29) In line with EC objectives, this first policy guideline of the merged Community established the framework for action, comprising medium term goals; annual reviews of economic activity; technical proposals and; contingency measures for supply problems. It was, in this sense, aimed at creating the necessary conditions for implementing all the measures proposed and for securing the Community's oil supplies.

In the report the Commission provided three main factors as to why an energy policy was necessary. These were greater integration, greater dependence on imports and the economic importance of the energy sector. With regard to the first factor, the Commission stated that : "in contrast to the situation as regards products of the other industries and of agriculture, there are still serious obstacles to trade within the Community as regards energy products."(30) It

does not elaborate on what obstacles to this trade still existed. But it goes on to mention that :

> "If this situation does not improve, and if a common energy market is not achieved in the near future, the level of integration already attained in this field will be endangered."(31)

With respect to the second factor, the Community at that stage was reliant for fifty percent of its energy requirements from imports and thus an energy policy, it was hoped, would counterbalance the risks arising from such a situation. Finally, the energy sector in 1968 accounted for 12 percent of the Community's industrial production and its investments represented on average 15 to 20 percent of the Community's industrial investments.(32) As it stood, it was an economically important sector.

The aims as mentioned in the memorandum remained unchanged from those given in the Protocol of 1964(33) and were not given in strict order of priority. The Commission, however, did draw attention to a number of aspects. Firstly, the level of energy prices, and their relation to the cost of living. This relationship explained "why the protection of consumers' interests must be the basis" of the Community energy policy(34) and why it was important to adopt a long-term view of the world energy situation. Secondly, the Community was to seek security of supply "at prices which [were] relatively stable and as low as possible."(35) It was thought that the adoption of a long term view towards this latter goal would help in its attainment. Finally, the Commission stressed that the aims of energy policy "cannot

be attained in isolation."(36) It was (and is) reliant on the speed of motivation of social and regional policy.

The main body of the report consisted of three sections. The first section was concerned with the creation of a framework of action "to achieve the aims and ensure the coherence of the measures required."(37) The following section dealt with the technical aspects for the establishment of a common market in the energy sector. It included measures to remove obstacles to trade, freedom of establishment and the harmonisation of rules governing competition. The final section was aimed at ensuring security of supply. As such it acknowledged the importance of energy in the economic activity of the member states and set out measures for an appropriate energy supply policy and recommendations on commercial policy, investment, industry and research.(38)

According to the Commission, its policy paper was based on that of the 1964 Protocol and also on the 1967 Council Decision.(39) These two policy papers were supplemented by two additional working papers : "The current situation on the Community energy market" and "Fundamental problems of a Community energy policy". The former, a detailed factual account of contemporary developments in the overall energy market,(40) was aimed at establishing agreement on the main features of the energy economy, while the latter, an assessment of the problems to be resolved if the objectives

of a common energy policy are to be realised, was a general report on the various energy sectors.

This first policy guideline was presented at a time when the energy consumption of the six Community members was increasing steadily. Energy consumption had risen from 289 Mtoe in 1950 to 461 Mtoe in 1960 and 636 Mtoe in 1967 - representing an annual rate of increase of 4.8% and 4.7% respectively(41). Ninety-nine percent of the oil consumed came from outside of the Community and 79.5 percent of the total came from the Middle East and North Africa.(42) This was also the period when the percentage shares of energy sources altered significantly with oil increasing its share from 10 percent in 1950 to 51 percent in 1967 and the use of coal declining from approximately 86 percent of consumption in 1950 to 25 percent in 1973.(43)

However, this increased dependence had not produced any Community policy for oil. The report of 1968 accepted the dominant position of oil but it only made very modest proposals for action in the field. "It wanted to intervene only to ensure a free market, to provide for action in the event of disruptions of supply, and to promote the development of alternative fuels." (44)

The Council of Ministers, furthermore, only accepted these limited proposals in principle. This was mainly because of the complacency that prevailed, namely the belief that the oil companies would keep plentiful supplies of cheap oil

flowing, and because of resistance, on the part of the Dutch government, (influenced by Shell) to any suggestion of interference in the market. Therefore, with the exception of the recommendation on stockpiling which was implemented, national government energy policies continued to remain divergent.

Whatever the drawbacks, the Report of 1968 did lay at least some of the foundations for the Community's energy objectives. At the same time as this the Community was proposing to make energy supply and demand forecasts for a period of about five years. In addition, the Commission also planned to draw up annual reports on the energy situation and develop a programme of adjustment measures, including suitable procedures for their implementation. A Directive(68/414/EEC) was also adopted by the Council in 1968 on maintaining stocks of crude oil and oil products(45). Petroleum stock levels were set at 65 days' average daily internal consumption(46) and in 1972 this was updated to 90 days internal consumption. The main reason behind this upgrading was the recognition of increased dependence on supplies from outside of the Community.(47)

By 1970 the European Community's energy policy only really amounted to a 65 day stockpile requirement and a number of guidelines. No common market in energy existed and in general a policy of low-cost supplies based on huge imports of cheap oil from the Middle-East and North Africa was followed by the member states.

Third Stage

The third stage in EC energy policy formulation dates from 1970 to 1974. The period between these two dates was one which witnessed the competitive advantage between consumers and producers shifting from the former to the latter. By 1970 world demand for energy, especially oil, was rising at a constant rate. The non-Communist states were reliant on oil imports for 43 million bpd for consumption, up from around 9 million bpd in 1950. This was an average compounded growth rate in oil usage of over 7 percent per annum.(48) For the European Community net imports of petroleum(49) rose from 499.6 million tonnes in 1970 to 547.3 million tonnes in 1973.(50) Total internal consumption of crude petroleum in the EC in this same period rose from 534.4 mtoe to 620.3 mtoe.(51) Imports of crude petroleum (as a percentage of total internal consumption) therefore, rose from 97.2 percent in 1970 to 98.9 percent in 1973.(52) In other words, excess world oil production capacity had diminished, the buyer's market had turned into a seller's market and with it came the rise of OPEC as a relatively effective vehicle for co-ordinating the oil producer's policies and aims.

Between 1971 and the end of 1972 OPEC managed to achieve substantial price rises and by December 1972 crude oil was selling at 60-70 percent above its mid-1970 price.(53) The period up to October 1973 was one which produced little in

the way of concrete output in terms of energy policy, on the part of the EC.

At this stage, however, the Community was aware of the dangers to which Europe was exposed.(54) In October 1972 the Commission submitted a memorandum on the problems and possible solutions for energy policy between 1975 and 1985.(55) It was an attempt, firstly, to anticipate the energy problems likely to happen up to 1985 and to highlight the available options(56) and secondly, to stimulate progress on the implementation of a common energy policy.

On the problem of oil supplies the Commission managed to convey a sense of urgency and stated in its memorandum that "the question of security of supply i.e. regularity of deliveries" will in "the future even more than in the past", be "threatened by more or less widespread interruptions and do not.....rule out local breakdowns."(57) The Commission also argued that long term security (of oil supplies) should be given priority over temporary price advantages. Furthermore, talks with the United States and Japan were recommended as were the improving of OECD procedures in order to provide better reciprocal information and to work out joint decisions on security and stockbuilding.(58) With regard to the oil exporters, the Commission recommended consultative procedures with them and also agreements to promote the oil exporters' economic and social development in exchange for guarantees, by them, on the export of oil to

the importing states , in other words to try and attain a stable relationship between equal partners.(59)

Lieber argues that foreshadowed in this memorandum of 1972 were two divergent courses of action (60) : firstly co-operation with other consumer states, especially the United States and Japan via the OECD and secondly, special arrangements between the European Community and the oil exporters. "The inability to make a choice between these courses of action was to prove damaging to the Community when the crisis began a year later."(61)

In October 1972, at the first summit meeting of the Nine in Paris, support was given to a common energy policy but agreement was only given to a 90 day stockpiling policy and the encouragement of efforts to guarantee supplies at satisfactory prices. It left most of the details (on a common energy policy) to be worked out by the Commission for later submission to the Council of Ministers. The Heads of State and/or Government of the member states did recognise, however, the underlying problem besetting energy policy was to guarantee long term security of supplies under satisfactory economic conditions. A point which was to be reiterated in the 1973 "Guidelines and Priorities."

In April 1973 the Commission produced its "Guidelines and Priorities for a Community Energy Policy."(62) The communication comprised three main recommendations : co-operation between the Community, the United States and Japan

in order to avoid overbidding for crude oil imports by the three; and the development of relations between Europe and the oil producers. According to the communication :

> "The best guarantee of stability....will be a climate of mutual trust between the Community and its suppliers.(63)

The third recommendation concerned the organisation of the Community oil market, the main objective of which was to "preserve effective competition and ensure freedom of movement within the Community."(64) Apparently, the achievement of this aim, according to the Commission was being impeded by, amongst others, technical obstacles which were the result of differences in the specification of petroleum products. The Guidelines also called for the implementation of emergency oil import sharing measures in the event of a crisis and for the establishment of a joint energy consulting group with the US and Japan.

In this way the Commission set out the criteria which would influence the Community's choices and shortcomings in the October 1973 crisis : avoidance of overbidding; sharing of oil stocks among member states; consumer consultation with the US and Japan; co-operation with the producer states and; emphasis on freedom of movement for petroleum products.

In May 1973 the Council of Ministers held its first meeting on energy policy for three years. It failed, however, to reach any substantive agreement on consumer collaboration or on emergency energy sharing procedures. What did emerge

from this meeting were sharp political differences between the various members over the direction that energy policy should assume. The French refused to authorise talks by the Community with the US and the OECD, giving as their reason that the members must first reach agreement on their own policy and that talks with outside parties should only be conducted by governments and not by the Commission. George goes so far as to suggest that France was the main barrier to the Commission also being allowed to negotiate with the oil producers.(65) In assuming such an attitude France aimed at improving her position *vis-á-vis* the US and Britain and at cementing relations with Libya, Algeria and other producers while, at the same time, not compromising its foreign policy stance towards the Third World.

It was only in October 1973 that the extent of the advanced industrialised economies reliance on the Middle Eastern oil producers was exposed. As stated, nearly all of their oil consumption was imported - approximately two-thirds from Arab states. Thus, an obvious need existed for a more coherent regional response to the energy situation. But, because of differing priorities among the members, agreement on specific Commission proposals was resisted. Differences among members existed not only in the political and economic areas but also in a regional context i.e. with regard to levels of development. Ultimately this resulted in the EC failing to reach a common energy policy prior to October 1973. It should also be noted that the first enlargement of the Community had just occurred and the EC member states

were still adjusting to this. Furthermore, it may be suggested that the differences among the members on the eve of the October war were indicative of the failure of integration in the energy sector. As Simonet suggests the cohesiveness that the Europeans were supposed to display, after fifteen years of relentless efforts, was sadly lacking when called upon.(66)

Community response to the 1973 oil crisis

Therefore, on the eve of the outbreak of the Yom Kippur War on 6 October 1973 the European Community lacked coherent oil or energy policies. Its members were divided in their policies towards both the United States and the Middle-East, which ruled out any systematic response towards OPEC. The member states were divided in their relations to the Arab members of OPEC. France and Italy, for example, had relatively strong links with the Middle-East, while Britain and the Netherlands retained their belief in the international oil industry and hoped it would work out a compromise between consumers and producers and thereby avoid any diplomatic confrontation. Other member states, like West Germany, trod a middle path. Germany at this stage was involved in a goods-for-oil deal with Iran but was also encouraging German companies to merge to create a market counterweight to the non-Germany oil industry.(67)

Consequently, such differing approaches meant that the Commission was restricted to preparing guidelines and market

projections. "It is no wonder that the attempts of the Council of Ministers to formulate a common energy policy were doomed to failure."(68)

The full force of the crisis was felt directly by the Europeans on 17 October when OAPEC announced its embargo entailing successive monthly cuts in oil production. Prior to this announcement, OAPEC had raised the price of oil from about $3 per barrel to $5 per barrel. It was on the following day that OAPEC members decided to reduce oil production and which would be lifted once Arab objectives, in the conflict against Israel, had been achieved. Consequently, the Western states found themselves divided into three categories : those which were to receive no oil - this included the Netherlands, the United States and Canada; 'friendly' states - including Britain and France who were to receive normal supplies based on the previous nine months of 1973 delivery levels and; 'other' states which faced phased reductions of 5 percent per month.(69)

One immediate response of the European Community to the situation was the issuing of a "Statement on the Situation in the Middle-East". This essentially supported the Arab interpretation of UN Resolution 242, which stressed both the need for Israeli withdrawals and the formal recognition of Palestinian rights. This document, which can be seen as an appeasement of the Arabs did produce an immediate, if only a minor, payoff for the EC members : on 19 November OAPEC oil ministers decided not to impose a 5 percent cutback on

European Community oil scheduled for December. The only state not exempted was the Netherlands.

Along with the curtailment of oil supplies went a fourfold increase in oil prices.(70) Initially, OPEC had planned to increase its prices by 10 percent (in line with the tightening markets caused by increased US imports), but the subsequent embargo and cutbacks had an unexpected success resulting in scarcity and panic buying on the world oil markets. This in turn, led to prices for the marginal quantities being driven up to unrealistic levels and allowed Iran to lead other OPEC states inn a 400 percent oil price increase over pre-war prices.(See Table 11 - Appendix)

It was only in the initial stages of the 1973 crisis that the European Community members were able to achieve a semblance of common policy towards the Middle-East, as well as to derive some sort of benefit from it, albeit in the foreign policy arena. However, "as the question of the Dutch embargo became more overt and the need to choose between siding with the United States (to grapple with problems of supply, price, conservation and monetary recycling) or OPEC (to seek a modus vivendi with the oil producers) became more acute, European policies were rapidly reduced to disarray."(71)

In this initial stage of the 1973/74 crisis the Nine member states were unable or unwilling to present a united front. This was primarily because of the Dutch stand towards the

Arab producers and the Palestinian issue and was complicated by the subsequent OAPEC embargo. In other words, a position of European solidarity was jettisoned because the majority of member states felt too vulnerable (in their dependence) to OPEC pressures or preferred to give preference to maintaining or seeking a *modus vivendi* with the Arabs. The energy crisis was thus regarded as a matter of national survival : oil was crucial for industry, agriculture, heating, electricity and transportation; and indirectly, for continued employment, interest rates, economic growth rates, maintaining inflation at acceptable levels etc and thereby, continuing political survival. Therefore, it was not surprising that national self interests took precedence over wider Community interests, despite the fact of economic interdependence and regional integration among the members of the Community. In so doing, an overt agreement on EC or OECD oil sharing was precluded.

The EC held its first summit meeting since the start of the crisis in Copenhagen in December of 1973. The result of this meeting was that all member states reiterated their support for UN Resolution 242.(72) The Nine chose to ignore both the embargo on the Netherlands and any idea of presenting a unified front against OPEC. Instead, it was decided to give the Commission the task of drafting proposals for the orderly functioning of the energy market, increased efficiency in energy use, the development of alternate energy sources, measures for research and development and, proposals for co-operation among both

producers and consumers. These proposals were to be presented to the Council of Ministers before the end of January 1974.

Another, but more positive outcome, of the Summit was the decision to create the Energy Committee. It was composed of representatives of the member states and was responsible for :

> ".....ensuring the coordinated implementation by Member States of the measures adopted by the Community, providing for the exchange of information and consultation between Member States and the Commission with regard to supply conditions and forseeable developments in the supply situation, and also assisting the Commission in the formulation of its proposals."(73)

The Copenhagen summit revealed, once more, the inability of the European Community to produce a common energy policy in response to the energy crisis, even though most of the summit was concerned with the crisis. As Ehrhardt aptly put it, the Copenhagen summit turned out to be "an embarrassing political debacle" and that its declarations "remained fine exercises in the grand style".(74)

Not only did the crisis present intractable international problems involving the Middle-East, the Atlantic Alliance, and security of supplies etc which served to intensify the different priorities among the EC members but it also presented domestic problems. These appeared in the form of employment, inflation, energy usage and allocation, fiscal and monetary policy and also in the form of political

disagreements among the various policy-making groups over what policy to assume, both externally and internally. In many ways the internal problems of the Member states dominated attempts to institute a common energy policy within the Community and hampered efforts not only to deal with OPEC but also growing American attempts to put together a broad-based front consisting of the developed consumer states which resulted in the Washington Conference of March 1974.

The Washington Conference on energy was convened on 11 February 1974. It originated from an idea put forward by Henry Kissinger in December 1973 in which he stressed cooperation among the industrial states and proposed the setting up of an energy action group comprising representatives from Europe, North America and Japan. Their aim was to put together a preliminary action programme covering all sectors of the energy market.

The period up to and after the Washington Conference was dominated by intra-EEC feuding, not to do with energy *per se* but with France's position in the EEC and with the EC's relations with the US. It was a continuation, on France's part of its Gaullist, anti-Anglo-Saxon attitudes and consequently France regarded the conference from the beginning as an attempt by America to reassert its hegemony over Europe and also to create a confrontation between consumer and producer states.

The other eight member states were not as apprehensive in their outlook as France, but they too were not entirely satisfied with the US objectives in launching the conference. All nine member states had issued at the Copenhagen summit a statement that they were interested in (and realised the importance of) consumer-producer negotiations. This was backed up later on in January 1974 with a secret agreement to convene an Euro-Arab conference later on in the year. The whole logic behind the European move was dictated by their extreme dependence or vulnerability on oil from the Middle-East producers. This attitude, however, ran contrary to that held by America which was against bilateral deals and in favour of multilateral deals.(75)

France's position aside, the remaining eight member states found themselves split between supporting the US, as an ally and as part of the Atlantic Alliance, and veering towards the Arab producers on whom they were so reliant and ensuring their security by closer relations with them. The outcome of all of this wavering was that of a compromise between the two conflicting positions, which resulted in a mandate in February in which it was agreed that at the conference energy problems should be analysed and the responses passed on to the relevant international body. In other words, the conference should not result in a permanent organisation.(76)

Once at the Conference in Washington, divergences continued between the Eight and France. France adopted the stance that it was against "any attempt to organise a common energy policy for the industrial nations because this would look like an attempt to gang-up on the oil producers."(77) Britain sided with Germany, in line with America's position at the Conference in opposition to France's stance. Thus, France's attitude in favour of bilateral deals, brought into question, at that stage, the survival of the EEC (as a political entity) and the future relations between Europe and America. As Schmidt pointed out at the Conference : "the French were trying, and failing, to keep open a gap between the United States and the European Community."(78) It was illustrative of the divergences among member states.

The major outcome of the Washington Conference was the establishment of the International Energy Agency, as an agency of the OECD, in November 1974. Agreement was also reached by America, Canada, Japan, Norway and the eight EEC member states on co-operation on the following : "conservation of energy and restraint demand; accelerated development of new energy sources; accelerated research and development and a system of sharing oil supplies in emergencies and severe shortages."(79) However, as a result of the Conference and bitter differences between the French and the Germans and other members, France rejected the principle behind these and refused to sign important parts of the communique. In so doing, France distanced herself from the other EC partners over the issue of continued co-

operation with the United States and the pursuit of a largely multi-lateral approach by the major oil consumers towards the producers. It was a continuation of earlier behaviour on France's part towards the European Economic Community.(80)

In September 1974 the Council of Ministers finally adopted the energy guidelines proposed by the Commission.(81) These guidelines "Towards a New Energy Policy Strategy for the European Community" called for a long term strategy in response to the preceding oil crisis. It involved long term objectives for 2000 for nuclear energy, gas and non-conventional energies. It also stated specific medium term objectives for 1985 which included *inter alia* on the demand side, the reduction of growth of energy consumption and increased consumption of electricity, while on the supply side, increased nuclear energy, solid fuels and natural gas consumption was envisaged. Oil consumption was to be reduced. Overall, however, these guidelines were marked by indecisiveness. Subsequent efforts at formulating a common energy policy proved to be merely a reformulation of these guidelines.

Throughout much of 1974 the energy policy differences among the Nine members remained unresolved. These differences were still subject to domestic political priorities. For example, in July 1974 the British Labour government, following in the footsteps of the previous Conservative government blocked a declaration "loosely tying the Nine to

a long-sought after common energy strategy."(82) By its actions Britain aired the fact that it thought the real "ball-game" was to be found in the twelve nation Energy Co-ordinating Group (ECG) which include America and Japan.(83) Britain was against the EC's ideas concerning energy, particularly those for fixing common energy targets and controlling the oil sector.(84) It thus refused to agree to the idea of committing the Nine member states to a common energy policy, aimed at decreasing dependence on oil imports. By September 1974 Britain agreed however to a resolution which committed the member states to a common energy policy.(85)

In the eighteen months of this first energy crisis of the 1970s, the European Community and its Nine members failed to make considerable progress in formulating their own common energy policy and also in pursuing a common policy in international negotiations and organisations.

Each of the Nine EC members, however, did respond nationally to the energy crisis in addition to their collective response within the framework of the EC. But the events of winter 1973-74 served only to underline their vulnerability and inability to formulate and, probably more importantly, maintain a coherent regional response. Differing lines were taken by the various member states towards coping with the problem. Some states, especially Germany and the Netherlands, believed that national interests would be best served by a co-ordinated multilateral policy among the main

oil consuming states. Others, particularly Italy, Britain, Belgium and France, put greater emphasis on striking bilateral deals with the oil producers, initially, to guarantee security of supply and subsequently to provide for monetary recycling. This was in order to cope with the 400 percent increase in oil import costs. France went so far as to carry its policies out in isolation from the other members - a case of *sauve qui peut*.(86) France began, for example, negotiations with Libya, Iraq, Algeria, Syria and the Iranians, while Britain sought to strengthen its relations with Saudi Arabia. The EC, it appeared, seemed helpless in the face of the situation and its response amounted to the suggestion that the agreements "which might be concluded by certain Member States with the oil-producing countries should at least be subject to previous consultation at Community level, as the Commission has suggested."(87)

By mid-1974 once new governments had been sworn in, in Germany and Britain, the main EC member states moved from bilateral to multilateral deals involving the United States.(88) The pursuit of bilateral deals in the crucial period of the crisis from October 1973 to March 1974 should not be over-estimated. They were a continuation of pre-crisis dealings. "To the extent that measures of bilateralism were pursued during the crisis and might again be in the future, the causes would lie as much in domestic political and economic necessities as in the failure of the European Community and broader multilateral

organizations(sic) to offer a more promising means of joint cooperation."(89)

The events of the first oil crisis did not, as was initially hoped, bring the European member states closer together. Instead, it exposed the Community's inability "to face a major challenge in a way commensurate with its claim to be a major economic power evolving progressively into a political one."(90) In an ideal situation, as Lieber suggests, an appropriate energy policy would have included complete harmony within the EC on taxes, conservation, circulation of supply and policies toward the oil companies and externally, it would have entailed a unified approach in dealing with the Arabs and the United States.(91)

Why then did the Community fail to present a unified front against the oil producers and to formulate a common energy policy? Briefly, it failed because of a combination of factors including fundamental political differences among the Nine members, asymmetries of power between Europe and America and problems of domestic politics.(92) The political differences included whether or not to treat the domestic oil companies in a laissez-faire manner, as did Britain, Germany and the Netherlands, or whether to pursue an interventionist policy as the French and Italians did. Another political difference was the problem of the attitude to assume towards the Arab-Israeli conflict. France, Italy and Britain adopted an increasingly pro-Arab stance while, particularly, the Netherlands and Germany were inclined to

adopt an impartial or pro-American approach towards the whole issue. Profound differences in orientation toward the US also existed with France favouring a more autonomous relationship while the other members favoured closer American ties.

The asymmetries of power involved in the first oil crisis lay on a fragile base of (asymmetrical) interdependence, in that while the EC and the US were interdependent in their economic and monetary structures, the European states were far more vulnerable to the costs of disruption or change than were the Americans. European economic activity was more vulnerable to changes in monetary flows and exchange rates. Moreover, the EC members remained highly vulnerable because of their dependence on imports of energy and other raw materials. The Europeans also lacked a sufficiently strong centralised decision-making machinery to deal effectively with such issues at hand.

The energy crisis, therefore, brought to the fore asymmetries of power which previously had been latent. It meant that, because of the factors mentioned above, the European states faced strong pressure from the US to rely on its leadership in energy and related economic matters as well as paying greater heed to American political aims. The outcome was increasing strains in the Atlantic Alliance.(93)

During the course of the crisis, therefore, the governments of the Member states were impeded by both international forces and by increased domestic demands and problems. All were the outcome of the worsening situation and pre-existing constraints. These external impacts manifested themselves in economic pressures (inflation being the main one caused by the price rises and which contributed towards the recession); in political problems and inherent in this were social implications. The result was that the European Community appeared hesitant in the face of uncertainty. It failed to formulate an adequate common energy policy, with sufficient long term measures to secure its supplies. For the short to medium term it did attempt to address (and rectify) the situation at hand. But it failed to set up adequate machinery to deal with the oil shortfalls at the time. This was to be left to the International Energy Agency to implement once it came into being. Nonetheless, the member states did come through the storm relatively effectively, despite the obstacles. It was to be in the long term that the effectiveness of the EC as an organisation would be tested in its ability to come up with and attempt to implement an adequate energy policy which displayed sufficient vision for the future.

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12. See EUROPEAN COMMUNITY (1964) : OJ 69 30 April 1964
    Under Article 189 of the EEC Treaty of 1957 the Protocol had no legal basis.
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CHAPTER 4

EC ENERGY POLICY : ITS EVOLUTION 1975-1989

Turbulence, uncertainty and volatility characterised the period after the first oil shock. It was one which witnessed not only the increasing power of OPEC but also its relative demise and a reversal, in the 1980s, of trends set in motion in the 1970s.

The European states continued to rely on a high level of imports to meet their oil consumption requirements. Between 1973 and 1978 oil imports constituted 70 percent of their oil needs. By 1978, Western Europe's dependence on crude oil supplies from the Persian Gulf and North Africa had risen to 14 million bpd or over 80 percent of oil imports.(1) On the other hand, the US now only obtained some 30 percent of its oil from this region. However, between 1974 to 1986 total crude oil imports for the Community fell from 560 million tonnes to 328 million tonnes with OPEC providing no more than 45 percent of EC imports in 1987 compared to 94 percent in 1974.(2) The share of oil imported from the GCC member states fell even more sharply in this same period from 45 percent in 1974 to 14 percent in 1987.(3)

After 1974 global oil consumption experienced a temporary reversal of trends. It declined at an annual rate of 2.5 percent between 1974 and 1975. This was a reversal of the 6 percent per annum experienced between 1970 and 1973.(4) However, from 1975 until 1979/80 oil consumption regained its previous rates and grew at an annual average of 5 percent, thereby continuing the trend begun after 1945. This situation reflected, at a simplified level, the fact that the oil consuming states had not gained a great deal from the preceding five years. Instead by 1978 it was being predicted that the oil crisis was over - an event of the past.

The period after mid-1974 up to the end of 1978 was one which saw a temporary respite in the oil situation - the calm before a further storm. Oil prices in this period experienced a slight reduction in the real price of crude oil, while the one major achievement on the external EC energy scene, was the establishment of the International Energy Agency as part of the OECD.(5)

The Fourth Stage

Against this background, the European Community implemented its fourth stage in policy formulation from 1974 to 1978. The one major and significant development in this period was the December 1974 Council Resolution outlining the Community's "Energy Policy Objectives for 1985".(6) In this Resolution the Commission revised the targets it had set in

the study "Towards a new energy policy strategy for the European Community"(7) to take into account updated forecasts from member states. The Commission also commented on the scope and nature of the objectives and suggested a general course of action for each individual energy sector.

Contained within this Resolution was the proposal to reduce Europe's dependence on imported energy to 50 percent and if possible to 40 percent, by 1985 compared to the 63 percent in 1973. It was also agreed that the rate of growth of energy consumption in the Community, as a whole, should be reduced in order to achieve a level of 15 percent below the January 1973 estimates. This was to be achieved by 1985. Oil imports were to be reduced to 540 mtoe (640 in 1973) while "a percentage of imported oil in total energy requirements would be respectively 38 and 28% (61% in 1973) or 75 to 70% of consumption (98% in 1973)."(8) Moreover, with regard to patterns of energy use, these were to be altered to increase security of supply, particularly to increase the contribution of electricity produced by nuclear energy.

Several salient points about the 1974 resolution are made by Kohl. Firstly, the objectives reflected, a positive development in the Community's energy policy. Secondly, acceptance was given to inevitable continued dependence on external supplies and at the same time attempts were implemented to reduce this dependence. However, the Resolution provided little more than a loose framework for

nine separate national energy policies.(9) The member states, in this Resolution, faced up to the fact of their dependence on imported energy particularly oil and to the fact that positive steps would have to be taken to remedy the situation. However, only a loose structure was provided in which to achieve this. As the resolution states it represented only :

> "... guidelines for national policies and serv[es] as a significant guide for energy producers and consumers in the Community."(10)

The Resolution had no legal status. It was merely there to provide a guide for the member states.

Other general energy principles and programmes which were passed between 1974 and 1978 and which are still in force include a Council Resolution on 3 March 1975 on energy and the Environment(11); Council Regulation (EEC) No 1729/76 of 21 June 1976 concerning the communication of information on the state of the Community's energy supplies(12); and Commission Regulation (EEC) No 3025/77 of 23 December 1977 applying Regulation (EEC) No 1056/72 on notifying the Commission of investment projects of interest to the Community in the petroleum, natural gas and electricity sectors(13).

Principles and programmes with respect specifically to oil, include the Council Decision of 7 November 1977 on the setting up of a Community target for a reduction in the consumption of primary sources of energy in the event of

difficulties in the supply of crude oil and petroleum products(14); Council Decision of 14 February 1977 (77/186/EEC) on the exporting of crude oil and petroleum products from one Member State to another in the event of supply difficulties; and the subsequent Commission Decision on the same topic of 28 September 1978.(15)

This period was also characterised by a concentration on the domestic energy policies of the European members. Results were mixed. Oil imports for the whole of Western Europe declined during this time from approximately 14.3 mbpd in 1973 to 12mbpd in 1978(16)(See Table 6 - Appendix). Net imports of petroleum(17) for the nine EC member states, in the corresponding period fell from 587.6 million tonnes to 472.1 million tonnes but rose again slightly in 1979 to 475.9 million tonnes.(18) These figures reflected the outcome of a combination of factors : economic recession, expanding North Sea production and, but only to a limited extent, the result of genuine structural adjustment. However, by 1977 gross energy demand had surpassed 1973 levels and was increasing - a result of the growth of German and French economies and of greater reliance on natural gas.

Despite the aforementioned figures, this period did not see a significant reduction in dependence on imported oil. The EC did attempt to move in this direction and it did succeed in encouraging modest measures of energy conservation, promoting efforts to reduce energy import dependence and subsidising energy research and development projects.

However, the final result of such efforts were limited and their impact was negligible. The results which were achieved, were done so through member states' own national policies. Furthermore, rival differences and interests among the member states prevented the emergence of an effective energy policy. Differences arose over among other issues : ".....the question of floor-prices for British North Sea oil, over subsidies for European-produced but costly (twice the world price) British and German coal, over the development of nuclear power and about the balance between free market and dirigiste economic strategies....."(19)

More specifically, on the eve of 1979, despite Europe holding oil consumption and demand at or below 1973 levels compared to the US where oil consumption and imports had continued to rise dramatically, the European Community had failed to provide adequate measures to conserve energy. In so doing it chose to ignore the direct relationship between increased economic growth and additional energy consumption. It had also failed to secure an effective commitment from the member states to the development of renewable energy sources. Moreover, the EC failed "to devise ways of avoiding competitive bidding for oil, of reducing imports, or of achieving a long term stability in the oil market(whether by softening demand, by negotiation, or even coercion)"(20) In sum, the EC's accomplishments in this period were inadequate to meet the challenges which were to arise out of the Iranian Revolution of December 1978.

The second oil shock

The period 1978 to 1981 was marked by a further two oil shocks. The oil crisis of 1979 was precipitated by the Iranian Revolution, when between December 1978 and March 1979 5 million barrels per day of Iranian production was lost to the market. "Overnight 3 million barrels of surplus oil production was eliminated and world oil reserves were drawn down at the rate of 2 million barrels [per day]."(21) Saudi Arabia's response to the events was to raise its production. They were unable, however, to compensate fully for the loss of Iranian oil on the market. As soon as Khomeni came to power, he announced that Iranian oil production would be 60 percent of what it had been under the Shah. Concurrent with events in Iran, there was dissatisfaction among the oil producers over oil prices, which had declined in real terms since the 1974 oil price rises. Oil companies, particularly, were unhappy with events as they had to make do not only with substantially reduced profit margins but also with the loss of control over the oil markets, as a result of OPEC's increased power.

In mid-1979, in response to pressure from the oil majors, the United States government provided US oil importers with a $5 per barrel adjustment for certain petroleum imports.(22) This resulted in increased pressure being exerted on already tight oil markets and combined with events in Iran, resulted in panic buying on the markets as

large independent oil companies, small refiners and the Japanese rushed to buy oil in anticipation of further price increases. Between 1978 and the end of 1979 oil prices rose by some 140 percent.(23)

Panic buying on the spot markets was further exacerbated when OPEC realised it could make increased profits by unilaterally raising official (long term) contract prices and diverting additional supplies on to the spot markets. This resulted in new upward pressures on oil prices, while increased stockpiling of oil, in anticipation of further rises, only served to boost demand further.

As such the impact of the second price rise was as much a result of consumer and distributor action as it was of producer behaviour. Stocks, at that stage were high - companies in the European Community states held about 650 million barrels of usable oil (i.e. in excess of minimum operating requirements), which was the requirement for fulfilling mandatory stockholding obligations.(24)

Reaction

The oil shock of early 1979 had not been anticipated by international companies, governments or the IEA and EC. Despite the presence of the IEA and its policies designed to handle a crisis, the response to the shortfall was similar to that of 1973 : oil users scrambled to ensure supplies for themselves at whatever price could be had without due regard

to the consequences of their actions on the markets. In many respects, the situation of 1979 was worse than that of 1973-74 because the oil companies only controlled about 50 percent of the international trade in oil compared to approximately 90 percent before 1973-74. Therefore, it was more difficult for international companies to allocate supplies as they had done in 1973-74 i.e. less control could be exerted over the markets. The markets instead were characterised by greater fragmentation, uncertainty and volatility.

In the intervening period, between the fall of the Shah and the outbreak of the Iran-Iraq war, additional pressures were placed on markets by the Iranian hostage crisis, and by the industrialised states continuing to build up oil stocks, so as to decrease their vulnerability to an oil cut.

EC's Response

With the loss of Iranian oil exports in 1978 and as a consequence of events in Iran, Western Europe experienced a significant reduction in its oil imports, particularly as Iran was the second largest oil exporter to the European Community, accounting for 16 percent of total Community oil imports in 1978.(25) The global shortfall, however, was quite small since oil stocks were at high levels and production shortfalls were consequently made up by the other OPEC states.

Despite these measures, some European states did experience serious supply disruptions especially the United Kingdom and outside of the EC, Sweden. At this stage of the crisis the governments of the various EC members were mainly concerned with crisis management to contain oil demand and distribute sufficient supplies to industry.(26)

Western Europe's management, technically, of the crisis was less than satisfactory, especially with regard to the management of the spot market where fundamental differences emerged between France and Germany. Germany, which depended heavily on the Rotterdam spot market, was against any attempt to interfere in the operation of the market, while France was in favour of increased supervision and regulation. At the EC summit in Strasbourg in June 1979, French proposals for tighter control on the Rotterdam spot market were rejected by Germany, the United Kingdom and the Netherlands. Similar differences also surfaced at the Tokyo summit in June 1979.

Similar problems were encountered on the political front by the EC. Europe had been left vulnerable and confused with events in the Gulf region(27). These were to prove indicative of the limits of Europe's influence. To this was added the ill-equipped nature of EC decision-making procedures for handling emergency situations.

As Maull indicates crisis management techniques were in this instance of limited importance, for the difficulties

which arose from this crisis were the result not so much of the actual impact of the supply interruptions or price increases, as the uncertainties and risks implicit in the new energy situation.(28) Most important "was the European response to the underlying problems of the world oil market : the demand-driven upward pressures on prices, the vulnerability to supply reductions, and the lack of a sound political superstructure."(29)

The demand side of the crisis received the most decisive reaction to the Iranian situation. Since France is not an IEA member, but is an EC member, IEA commitments have to be paralleled by EC decisions. Thus, the IEA decision of March 1979 to reduce the group's oil imports by 5 percent of projected levels for 1979, was followed by a similar EC decision taken at the Paris Summit in mid-March 1979. At the summit it was confirmed that the 5 percent oil import reduction target for the Nine would be implemented and an overall import dependence target of 50 percent for 1985 was set.

In May 1979 the second meeting of the IEA did no more than confirm the 5 percent target and the initiative was passed to preparations for the Tokyo summit and the Strasbourg Council of the European Community in June 1979. At the Strasbourg European Council the EC members agreed on an oil-import ceiling for the Community as a whole of 9.4mbpd (at 1978 levels) for 1980-85 providing the US and Japan would follow suite.(30)

At the IEA summit in Tokyo, in June 1979, a similar decision was taken, although targets were set on a national basis. Germany, Italy, UK and France committed their states and those of the EC to an oil import ceiling of 9.4mbpd for 1980-85, while the United States set a goal of 8.5mbpd for 1985.(31) These national targets were an innovation and, as suggested by Cowhey, "a response to both American pressures and American promises of lower targets for the United States."(32)

On closer examination, however, the supply constraints adopted by the members were not particularly far reaching. "The difficulties in translating group targets into national targets reflect the reluctance of governments to take stringent measures to reduce oil demand."(33) In a detailed analysis by the IEA, it was revealed that of prices charged to final consumers only in industry did a substantial and widespread increase in real prices take place : the transport and housing sectors often enjoyed lower real prices until, at least, 1978.(34)

Objectives for 1990

One of the more positive outcomes of 1979 was the Commission's communication to the Council entitled "Energy objectives of the Community for 1990 and convergence of policies of the Member States."(35) These objectives were

specified in an "Energy programme of the European Communities" drawn up in October 1979.(36)

The objectives for 1990 included(37) firstly, the reduction of the ratio between economic growth and growth in energy demand from 1.0 to 0.8 in 1985 and 0.7 in 1990. Secondly, the reduction of the Community's dependence on energy imports from 50 percent. Thirdly, the restriction of oil imports to the 1978 level of 470 million tonnes. The increased use of solid fuels and nuclear energy in power stations was given as the fourth objective. It was hoped to increase their use by 70 to 75 percent of electricity generation. Fifthly, to restore EC coal production to the 1973 level of 250 million tonnes, while concurrently raising coal imports and the capacity for consuming solid fuels. The sixth objective pertained to nuclear power stations and the provision of assistance for their construction programmes, while the seventh aim was expressed as "the establishment and application of rational and transparent price policies."(38) Finally, the EC member states were to search for, develop and demonstrate new energy sources. According to the Commission these recommendations formed part of the EC's three basic aims, notably :

> "(i) dissociation of economic growth and growth in energy consumption
> (ii) levelling out of oil imports [and]
> (iii) preparation of a more satisfactory energy supply for the more distant future."(39)

These objectives were a redrafting of the earlier 1974 for 1985 objectives. According to the Commission they were in keeping with the prevailing situation which was characterised by the impending enlargement of the Community to include Portugal, Spain and Greece; by the increasing spot market prices; by the prospect of increased oil imports by 1985 (despite a reduction of 20 percent between 1973 and 1978); and by the general oil market situation which was still volatile and unpredictable after the first oil shock. In effect the Commission saw these new objectives as being far more effective and carrying more weight than their predecessors. As the Commission remarked : "the measures forced upon the governments of the Member States by the threatening situation of late 1973 and early 1974 were conceived and adopted haphazardly and without much co-ordination or solidarity which reduced their effectiveness and endangered the process of building Europe."(40) In a sense, then, the new objectives were designed to counter this and provide a more effective energy policy.

The members of the EC also in this period recognised the importance of closer producer-consumer relations. In 1974 at the suggestion of France, producer-consumer relations were taken one step further with the development of the Conference on International Economic Co-operation(CIEC) negotiations of 1975-77, thereby instituting the first of the Euro-Arab dialogues. In October 1978, at an OPEC seminar in Vienna, twice yearly meetings were suggested

between OPEC and the EC to explore the possibilities of co-operation. Further calls were also made for increased consumer-producer co-operation between OPEC and the other industrialised countries.

The Euro-Arab dialogues ran into trouble almost immediately.(41) In response to the EC aiming at closer relations with the producers, the Euro-Arab dialogues, at that time, were an inappropriate vehicle for this sort of co-operation. The main issues of the international oil markets, at that time, namely the future supply levels and prices, could only be dealt with on a multi-lateral level mainly because of the nature of the market. It should have involved all the states concerned and not just the EC member states and the Arab oil producers.

Overall the response of the European states to the 1978-79 oil crisis revealed a fragmented response to a disintegrating order. The United States appeared reluctant(in its role as a major power) to devise a new international system for oil. This left the Europeans exposed and unable to devise alternatives. They were also unwilling to assume the lead in reconstructing patterns of co-operation with other consumer states and the producers. The Atlantic disagreements in this crisis were, by contrast, less serious than those of the 1974 crisis, with possibly the greatest irritant being the US's decision to subsidize imports of fuel oil.(42)

Among the nine member states of the European Communities, co-operation was hampered by differences in national energy positions which made it nearly impossible to co-ordinate energy supply policies with regard to domestic production. Each member insisted on maximising its own national interest : the UK and the Netherlands made their intentions clear about keeping their oil and gas resources under their own control (43); France placed increasing importance on its nuclear programme; and the Italians refused to burn more coal if those plans did not include increased assistance for the Italian refining industry.(44) EC energy policies, therefore, were largely confined to the demand side.

Fifth Stage

The formulation of an EC energy policy continued after the second oil shock, with increasing emphasis being placed on the security of supplies and the reduction in demand for oil. Numerous principles and programmes were adopted by the Council and Commission of the EC after 1979 and up to 1985/86. These form the fifth stage in the evolution of the EC's energy policy.

The EC's general energy policies in this period were formulated against yet more changes in the international energy environment. The two major changes being the start of the Iran-Iraq war and the oil oversupply situation which developed after 1983. The Iran-Iraq war erupted in

September 1980. It led to the halt of oil exports from both sides and a reduction in world supplies (as a result of production cuts) by some 3.5 million bpd - approximately 10 percent of world oil exports. With the war came renewed pressure on oil prices and the spot markets. This continued as the war progressed.(45)

A number of general EC principles, which are still in force, stand out with respect to this period. In June 1980 the Council passed a Resolution concerning Community energy policy objectives for 1990 and the convergence of the policies of the Member States(46). Five sectoral objectives were set by the Council - three quantitative and two qualitative ones. Of the former, one concerned primary energy demand and two related to energy supplies, particularly dependence on oil and electricity production, while the latter objectives related to the setting of energy prices and the increase of the share of alternative and renewable energies.

Altered markets

From 1981 the oil markets began to alter. The proportion of spot and short term deals increased comparative to long term contracts at official OPEC prices. Increasingly exporters had to compete for a declining market share of oil. At the same time numerous OPEC producers in order to stem falling

revenues(47), constantly exceeded their allocated production quotas.

In addition to increasing OPEC production, other factors which contributed towards the oil price fall of 1985/86 included the price increases of the 1970s which had provided an incentive for conservation and the use of alternate fuels, resulting in decreased demand; an increase in non-OPEC production largely as a result of North Sea oil and Mexican developments; the loss of control over the oil markets by the vertically integrated oil companies, with the establishment of OPEC and, in response to this, downstream integration by the oil producers which began to characterise the markets. In other words, the markets were increasingly characterised by a huge imbalance between potential supplies and actual demand for oil.

Economic effects of the oil crises

The economic and political consequences of the two oil crises were profound and extensive. The full impact of them was only felt some time after the crises had passed. In fact one could add that the present oversupply situation is the result of events in the 1970s and early 1980s. The large price increases posed the greatest threat to industrialised states, while the other aspect of these crises, the shortage of supplies, did have an impact but it was a limited and short term one. The oil price increases

of over 400 percent between 1973 and 1978 and 170 percent between 1980 and 1981, caused major disruptions to the EC's member states' economies. A worldwide recession followed from the first crisis. It broke postwar records in the rise of inflation and unemployment, and in the substantial decline in gross national product. The results of the second oil crisis were apparent in the double digit inflation rates after 1980, the negative or negligible growth rates, external imbalances and in terms of unemployment which was substantially higher than after the 1973-74 crisis.

For the OECD as a whole the costs in 1980 and 1981 have been conservatively put at $1000 billion or a 5 percent loss in real income in 1980 and an 8 percent loss in 1981.(48) Unemployment rose from 19 to 29 million between 1979 and 1982 while the recession heralded by the oil price rises led to an unparalleled and economically destructive level of interest rates. The disruption at the end of the 1970s came at a bad time for the OECD states, and hit them before their adjustment processes to the first oil shock had been complete and the structures of their economies were still weakened. Thus, increases were imposed on already high levels of oil prices and this goes partly to explain why the economic consequences were out of all proportion to the size and duration of the shortfall. These factors in turn, created pressure on most states to pursue a combination of contraction and expansion policies - the former aimed at countering inflation, the latter at stimulating output and

reducing unemployment. The result of such policies was a decade of "stagflation" - a combined reaction of low growth and high unemployment. In addition, "the impact of the first and second oil price explosions on the political fabric of the OECD countries, on the ability of governments to govern and on international economic and political co-operation cannot be readily quantified but has also no doubt been extremely damaging."(49)

1983-1986

In March 1983 a Council Regulation was adopted(50) which established specific measures of Community interest relating to energy strategy. In April 1983 the Council was asked to report on the progress made towards achieving the EC energy objectives, for 1990. The Commission realised that the existing policies were insufficient for attaining the objectives particularly in view of the declining oil prices which had removed some of the impetus for formulating new energy strategies. The reaction of the Commission to this development was to issue two communications in June and July of 1984.(51) The first was on energy strategy and the second was concerned with a review of the member states energy policies for the achievement of the 1990 objectives. The Resolution encapsulated the pre-1985 energy proposals, while the Regulation was concerned with financial assistance in relation to energy projects, schemes or measures. Of these two communications the Resolution is more important in view of its review of the objectives for 1990 and the

subsequent decision taken in 1985 to implement new objectives for 1995. However, under Article 189 of the EEC Treaty of 1957 it has no legal basis. This means that it is left up to the member states to decide on whether or not to implement the new objectives. The Resolution did seek to reaffirm the basic energy objectives of the EC; to put coal's case as an alternative source of energy more forcefully and; welcomed the Commission's intention to put forward new guidelines for 1995. The two communications were consistent with the overall strategies that were adopted in 1979 of a more efficient use of energy and the promotion of security of supplies.

With regard to specific measures relating to oil only one of major consequence was adopted, that of Council Regulation (EEC) No1893/79 of 28 August 1979 introducing registration for crude oil and/or petroleum product imports in the Community and subsequently amended by Council Regulation (EEC) No 2592/79 of November 1979.(52)

Sixth Stage

The sixth stage in the European Communities formulation of a common energy policy dates from 1986, the year of the collapse of oil prices, until the present. In the summer of 1985 Saudi Arabia abandoned its policy of restricting production which had largely contributed to the stability of international markets. The result was a collapse in oil

prices, as oil fell below $10 per barrel. This decision was to set the tone of the market for the next five to eight years. The price of oil, until the mid-1990s will revolve around the export volume levels decided by the Gulf states, in particular, and OPEC in general.(53) The oil oversupply situation will thus remain for some time to come. As Mabro states as long as the imbalance between supply and demand prevails then a serious risk exists that oil prices will fall once more to low levels and they will fluctuate erratically around a declining trend in both spot and future market prices.(54) The outcome of this situation, in the short term, will be that demand will rise only marginally. It is in the medium to long term that there will be more significant growth in demand if economic forces are allowed to continue unchecked by political or fiscal intervention.

The most significant proposals of this final period have been the Council Resolution of 16 September 1986 concerning the new Community energy policy objectives for 1995; the convergence of the policies of the Member states(55) and; the moves towards implementing a single energy market for 1992.

By 1986 the EC's objectives as laid out in the 1975 for 1985 and 1980 for 1990 objectives had been fulfilled or superceded. Thus, in September of 1986 new policy aims were defined for the period up to 1995. These aims are interdependent and are dominated largely by one concern : "the desire to avoid increased dependency on oil and

especially imported oil."(56) The reasoning behind the EC's current policy is based on the fact that the Community remains particularly vulnerable in the energy field, despite the considerable progress made in recent years. This is taken further by suggesting that in the near future, the vulnerability of the Community could be deepened *inter alia* by increasing consumption due to rising economic growth; a stabilization of European hydrocarbon (oil or gas) production; a possible reduction in efforts to conserve energy; and the increasing use of alternative sources because of the more advantageous prices of imported oil.(57) As affirmed by the Council :

> "...efforts must be maintained and, if necessary, reinforced between now and 1995 and beyond that date in order to reduce to a minimum the risk of tension at a later date on the energy market and in particular on the oil market."(58)

Of all of the aforementioned factors it is likely that in the short term, the lower price of imported oil will be the most important. For the long term however, it is more probable that a combination of all the above mentioned factors will contribute towards increasing consumption and hence deepened vulnerability.

Despite this the EC as an organisation has put forward the idea that a common energy policy will give the EC a better chance of success because Community vulnerability (to imported oil) is a matter of common concern and interest. Additionally, the Community's economic growth prospects are, to some extent, dependent on the energy supplies of its

partners, which in itself is influenced by their respective situations. This though is a contentious proposition. Furthermore, unified action involves increased effectiveness to avoid the dispersal and duplication of effort, particularly in research. By presenting a common and unified position to the oil producers, the Community is likely to be heeded by them. But a unified stance is reliant on economic and political factors being conducive to this.

Sectoral Objectives

There are a number of sectoral objectives in the new energy policy include (59). They include firstly increased efficiency of energy usage for all sectors. Between 1987 and 1995 the efficiency of final energy demand has to be improved by at least 20 percent. This is not a difficult target to reach since energy efficiency improved by more than 20 percent between 1973 and 1983. However, it may be possible that a peak has been reached in the level of energy saving and that the percentage for efficiency, in energy, over the next ten years will be considerably less than that of the previous ten years(1973-1983). It may become increasingly difficult to reach the targets proposed by the EC. A situation then arises whereby it is necessary to make substantial efforts to maintain efficiency because lower oil prices have made future investments less attractive while the less onerous energy savings have already been achieved.

The second objective is to decrease the share of imported oil in gross energy consumption through substitution. Between 1973 and 1985 the EC succeeded in decreasing the share of imported oil in gross energy consumption from nearly 62 per cent to 31 percent. (60) In order to maintain these levels a policy of economy, substitution and of encouragement of internal exploration and production must be pursued. "Efforts to substitute should be aimed in particular at the transport sector and at electricity generation." Similar measures have also been put forward for gas, solid fuels and electricity generation.(61)

The final objective is internal exploration and the greater use of new and renewable sources of energy. The EC advocates that up to and beyond the year 2000 these should play a greater role in replacing traditional fuels. Favoured new and renewable sources include the use of biomass and waste, solar, geothermal, hydro and wind energy etc. The principle advantages of using such alternatives is that over the long term they will result in supply diversification and lessened energy dependence, besides the more positive environmental effects and greater application of their technology for developing countries.

Horizontal Objectives

The horizontal objectives put forward by the EC, which accompany and compliment the sectoral objectives, include firstly, greater integration of the European internal oil

market. This is necessary in order "to reduce costs, encourage competition and strengthen the economic efficiency of energy-consuming industries."(62) Furthermore, greater integration would also improve security of supply "by ensuring improved distribution of resources in the event of a crisis." Implicit in this objective is the Single Energy Market of 1992 which will be dealt with in the next chapter.

Secondly, common pricing principles for energy consumption which are to be transparent and realistic. The key to any efficient supply structure lies in having realistic prices as they guarantee the competitiveness of industry "by ensuring effective competition between different fuels, preventing waste, and encouraging the development of indigenous sources."(63)

The third horizontal objective is improved security of supply which is to be achieved by the development of competitive European production (in the various energy related areas), diversification of imports, greater flexibility of consumption and effective contingency measures.(64) This measure also takes into account the stockpiling of fuel at electricity plants (30 days consumption) and measures specific to the oil sector (stocks equivalent to 90 days of consumption).

The development and increased co-ordination of external relations constitutes the fourth objective. The aim behind this is to strengthen the position of the Community and its

member states in the world energy market. This reflects the high degree of interdependence in world oil markets which is indicative of the need for greater and increased co-operation among states. As a result, the EC Commission does maintain close ties with OAPEC, OPEC and other oil producers.

Two further objectives include regional development and the promotion of technological innovation. The first objective relates to the impact of EC policy on less favoured regions, which means the readaption of regions affected by the decline in energy production. These regions should be supported and development encouraged through investments in energy.(65) The second objective relates to the development of new technologies and involves the EC in research, development and demonstration programmes. Community research in this aspect focuses on nuclear safety, controlled nuclear fusion, solid fuels, new energy sources and the efficient use of energy.

The final objective is that of protection of the environment and deals with the environmental aspect of energy policy. This is increasingly an important aspect as more attention is focused on the environmental side effects of energy.

Most of the measures evolved by the EC are, as such, designed to increase security of supply - directly or indirectly. Despite the apparent positive aspects of a common energy policy, it does have its drawbacks. These

include the fact that the EEC Treaty only provides for the harmonisation of economic policy. The development of a common energy policy is not specifically stipulated. As a result finance is a stumbling block; member states still cling to their national interests while the EC cannot afford to establish another policy based on the lines of the Common Agricultural Policy, in the energy sector, to finance energy projects.(66)

These latest objectives are distinguished from the previous ones, i.e. the 1975 for 1985 and 1980 for 1990, by the fact that they contain far greater detail on the achievement and requirement of the objectives. In this regard they are more specific; they contain greater recognition of the complexities of the energy situation and of energy markets and increased recognition is given to differences among the various member states and to the role of market forces in determining potential outcomes.

The new energy policy objectives for 1995 were adopted in September 1986 in an unanimous resolution.(67) However, since the objectives are not legally binding, some of the impetus is lost. Added to this is the fact that the EC lacks a common energy policy. More importantly, though, is whether these latest proposals will ensure an adequate supply of energy, decrease demand, diversify sources etc. The answer to this will only become apparent should a crisis occur and as 1995 draws closer.

Therefore, from the 1950s the formulation of an energy policy within the framework of the European Community has been on the one hand, a slow and arduous process characterised by inconsistency and a lack of cohesiveness, clarity and purpose on the part of the member states. On the other hand, it has seen the establishment of common guidelines, increasing emphasis on security, particularly those measures designed to increase security of supply and an awareness of the situation and events surrounding and encompassing the Community. In the end, however, what has to be asked is not whether the EC possesses a single energy policy, for it never will until provision is made for it either in the Treaties or under Article 235, but have the EC energy policies, as they stand, secured supplies and reduced vulnerability. In other words, have they fulfilled the function of providing adequate security for Europe's economies should an interruption in supplies occur. Chapters 6 and 7 will attempt to provide an answer to this. In the meantime, the establishment of the Internal Energy Market for 1992 will form the seventh phase in the EC's development of an energy policy.

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3. *Ibid.* : p29
4. BADGER D B in ALM A L & WEINER R J (eds) (1984) : Oil Shock : Policy Response and Implementation : Ballinger, Cambridge MA : p33
5. The IEA encompassed two major aims : the emergency oil sharing scheme and the provision of a forum for the industrialised states to try and address common energy problems.
6. EUROPEAN COMMUNITY (1975) : Council Resolution of 17 December 1974 concerning Community energy policy objectives for 1985 : OJ C153 09.07.75 p2 and Council Resolution of 13 February 1975 concerning measures to be implemented to achieve the Community energy policy objectives adopted by the Council on 17 December 1974 : OJ C153 09.07.75 p6 : Out of the twenty proposals in seven major areas on its agenda, only the policy objectives for 1985 - the basic rational utilization programme and a research programme on plutonium recycling, together with two previous proposals limiting the use of hydrocarbons in power plants - were approved. Under the EEC Treaty of March 1957, Article 189, a regulation is defined as having general application. "It is binding in its entirety and directly applicable in all Member States." A directive is defined as being binding, "as to the result to be achieved, upon each Member State to which it is addressed, but shall leave to the national authorities the choice of form and methods." A decision is also defined as being "binding in its entirety upon those to whom it is addressed." Recommendations and proposals have no binding force.
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8. OJ C153 09-07-75 p4
9. KOHL W L (1978) : Energy Policy in the Communities : Annals of the American Academy of Political and Social Science, Vol 440 1978 : p113
10. OJ C153 09.07.75 :p2
11. OJ C168 25.07.75 p2
12. OJ L198 23.07.76 p1
13. OJ L358 31.12.77 p12
14. OJ L292 16.11.77 p9 and O by 379D0639 (OJ L183 19.07.79 p1

15. Other principles and programmes relating to oil in this period 1974-78 include amongst others notifying the Commission on imports and exports to third countries ; Directives on crude oil and petroleum product prices in the Community. For a detailed list of this see Official Journal of the European Communities : Directory of Community Legislation in Force and other acts of Community institutions, Vol 1 December 1988 : pp606-607
16. **MAULL H W** : Western Europe : A Fragmented Response to a Fragmenting Order : Orbis, Vol 23 No. 4 Winter 1980 : p807
17. Crude oil and petroleum products
18. **EUROSTAT** (1981) : Review 1970-1979 : OOPEC, Luxembourg : p181
19. **LIEBER R J** (1979) : Europe and America in the World Energy Crisis : International Affairs Vol 55 No4 October 1979 : p536
20. *Ibid.* : p537
21. EBINGER C K (ed) (1982) : *op. cit.* : p8
22. This action was very limited in impact. It was only aimed at refined diesel and heating oil from Caribbean refineries. It also involved compensating payments rather than a direct government subsidy.
23. **EBINGER C K** (ed) (1982) : *op. cit.* : p36
24. **BADGER D B** in **ALM A L & WEINER R J** (1984) : *op. cit.* : p39
25. *Ibid.* : p81
26. The reaction of the oil industry to the 1978-79 crisis was not as helpful as that of the 1973-74 one - the evolution of stocks during the crisis and the action on the spot markets indicated that the industry had panicked. The second oil crisis, in many, respects was more difficult despite being less important quantitatively.
27. These included the collapse of the Shah's Iran and the disintegration of the co-operation structure in the Gulf.
28. See **MAULL H W** : *op. cit.* : p814
29. *Ibid.* : p814
30. *Ibid.* : p815
31. *Ibid.* : p815
32. **COWHEY P F** (1985) : The Problems of Plenty : Energy Policy and International Politics : University of California Press, Berkley : p215 The national totals had one important feature: as long as the collective total was maintained, the US conceded that the EC had the right to rejuggle the subtotals for individual nations - thus ensuring the targets remained voluntary pledges.
33. *Ibid.* : p815
34. *Ibid.* : p815 quoted from IEA, Energy Conservation in the International Energy Agency : 1978 Review (Paris, OECD, 1979) Tables 5,6 and 7
35. Stencilled doc. No COM(79) 316 final 14.06.79 in **COMMISSION OF THE EUROPEAN COMMUNITIES** : The European Community and the Energy Problem :

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36. Stencilled doc. No COM(79) 527 final 04.10.79 in Periodical 2/1980 : *op. cit.*
37. *Ibid.* : p26
38. *Ibid.* : p26
39. *Ibid.* : p26
40. *Ibid.* : p20
41. For a fuller discussion of this see **MAULL H W** : *op. cit.* : p817-818 and **SALEH A AL-MANI' & SALAH AL-SHAIKHLY** (1983) The Euro-Arab Dialogue : St Martin's Press, New York, among others
42. This move was overestimated in its importance and was phased out in October 1979. The Europeans were not consulted on the initial moves by the United States.
43. This attitude of the British and the Dutch is or was symptomatic of their increasing reluctance to share resources with the other Community members except within a framework strictly defined by the national interest. Both regard their oil and gas resources as strategic assets.
44. **MAULL H W** : *op. cit.* : p820
45. The severity of the initial shortfall due to the war was offset by several factors : high levels of world oil stocks - these were some 500 million barrels above normal operating levels; increased production by other Gulf exporters, particularly Saudi Arabia; slow demand due to the recession and efforts of the IEA members to dissuade companies from entering the spot markets in panic buying as occurred in 1979.
46. OJ C 149 18.06.80 p1
47. Mainly, the result of falling prices and decreased demand.
48. See **MAULL H W** (1984) : Raw Materials, Energy and Western Security : MacMillan, London : p118 The IEA, by comparison, puts these figures at around $1 trillion for a comparable two year period.
49. *Ibid.* : p118
50. OJ L73 19.03.83 pp8ff Council Regulation EEC No 625/83
51. OJ C 160 20-06-84 pp2-4 : Resolution of the ECSC Consultative Committee on the Commission's Review of Member States' energy policies OJ L 177 04-07-84 pp7-9 : Council Regulation (EEC) No 1890/84 of 26 June 1984 introducing special measures of Community interest relating to energy strategy.
52. OJ L 220 30.08.79 p1 and OJ L 297 24.11.79 p1 For fuller description see Official Journal of the European Communities : *op. cit.* : p606-607
53. An example of this is recent attempts in 1989 by OPEC to cut its output by 3m bpd to 19.8 m bpd. It was one the major reasons behind the 20 month high in oil prices in April 1989 with oil at $19.90. See The Economist : April 8 1989 : p97
54. **MABRO R** (ed) (1988) : The 1986 Oil Price Crisis :

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55. OJ C 241 25.09.86 p1
The objectives for 1995 were based on an analysis of the past results of each Member State's energy policy and the projection of energy supply and demand to the years 1995 and 2000. These are specified in GUILMOT J F (ed) (1986) : Energy 2000 : Cambridge University Press, Cambridge
56. COMMISSION OF THE EUROPEAN COMMUNITIES (1987) : The European energy Policy : European File January 1987 : 2/87 : p6
57. *Ibid.* : p3
58. OJ C241 25-09-86 p2
59. COMMISSION OF THE EUROPEAN COMMUNITIES (1987) : European File 2/87 : *op. cit.* : p3
See also OJ C241 25-09-86 pp1-3 : Council Resolution of 16 September 1986 : concerning new Community energy policy objectives for 1995 and the convergence of the policies of the Member States.
60. *Ibid.* : p6
61. *Ibid.* : p6-7
62. *Ibid.* : p8
63. *Ibid.* : p8
64. *Ibid.* : p8
The policy with relation to the last objective (improved security of supply) also makes allowance for a likely increase in dependency on imported hydrocarbons especially oil, by suggesting that suppliers should first be diversified in to long term import contracts for gas and uranium. More effective use of European sources of particularly oil and uranium should be made while other action should include the interconnection of gas pipelines, electricity systems and more flexible supply conditions; diversified electricity production structures; interruptable contracts and increases in multi-purpose plants - enabling consumers to change from one fuel to another.
65. For a fuller discussion see COMMISSION OF THE EUROPEAN COMMUNITIES (1987) : European File 2/87 : *op.cit.* : p10
66. MOHNFELD J H (1982) : Europe and World Energy Perspectives : The 1980s and 1990s : Intereconomics Vol 17 No 3 July/August 1982
One could suggest that although not 'specified' by the EEC Treaty, that such a stumbling block could be taken care of under Article 235 of the EEC Treaty, as has been done for the Regional Fund. Article 235 states : "If action by the Community should prove necessary to attain, in the course of the operation of the common market, one of the objectives of the Community and this Treaty has not provided the necessary powers, the Council shall, acting unanimously on a proposal from the Commission and after consulting the European Parliament, take the appropriate measures.

67. OJ C241 25-09-86 pp1-3
EUROPEAN COMMUNITY (1986) : Council Resolution of 16 September 1986 concerning new Community energy policy objectives for 1995 and convergence of the policies of the Member States.

CHAPTER 5

THE INTERNAL ENERGY MARKET

In the Council's stated objectives for 1995 one of the horizontal objectives is given as "the greater integration, free from the barriers to trade, of the internal energy market with a view to improving security of supply, reducing costs and improving economic competitiveness."(1) From this originated most of the momentum behind the formation of the internal energy market for 1992.(2) It, however, remains but one of the stated objectives of the Commission's 1985 for 1995 guidelines, despite the attention it has received. It is precisely because of the stated objectives that it has been decided to deal with it separately from the other 1995 objectives and, hopefully, to place it within perspective. It should be mentioned that the establishment of the Internal Energy Market is but one part of the more general movement towards the Single Market envisaged for the European Community in 1992. The Single Market "has become a key objective and the focal point of the revival of the European Community."(3)

In drawing up the White Paper for the establishment of the Internal Market in Europe in 1992, energy, initially, was deemed as being politically too difficult to pursue in this regard and it was seen, according to McGowan as being "a minefield of monopolistic industrial structures with a high

degree of public participation, too intractable for the Commission to tackle."(4) However, as the general momentum towards 1992 increased, so the Commission realised that energy could not be left outside of the Internal Market.

The Internal Energy Market had its initial origins in the communication sent out by the Commission to the Council in 1968 outlining the guidelines for a Community energy policy. In it, it argued that there :

> "..are still considerable barriers to trade within the Community as regards energy products. If this situation does not improve and if a common energy market is not achieved in the near future, the level of integration already attained in this sector may well be endangered."(5)

This view was further reiterated in the energy objectives adopted by the Council in September 1986(6)

The way was opened up for making the European internal market a reality once the Single European Act of December 1985 had been ratified and once the European Council(7) had taken a decision to assign the resources needed for implementing the Single Act. Therefore, as recent events in the Community testify, the key objective of the Community has become the completion of the internal market by 1992. This has, to some extent, overshadowed other EC objectives, with the path towards this goal being marked by the 1985 White Paper, the Single European Act and the Council decision of February 1988.

Objectives

More specifically, the main reason behind the creation of the Internal Energy Market (IEM) is to remove the barriers to trade in this area in accordance with the objectives stated for 1995 and the overall ones contained in the various treaties of the Community. It is hoped that by removing these barriers, it will bolster Europe's energy sector enterprises and improve the Community's security of supply. A major result of this will be increased competition which the Commission believes will enhance the competitiveness of the whole EEC economy, particularly as energy accounts for 7 percent of the wealth generated each year in the Community. This is compared to 2.9 percent for agriculture and 1.5 percent for steel.(8) A further by-product of this increased competition will include positive effects on employment, balance of payments, increased choice for consumers etc.

Another aim of the IEM is to improve the structure of the Community's energy industry. It "will make it possible to derive greater advantage from the complementarities, improve the cost structure and rationalise energy production, transmission and distribution activities,"(9) thereby encouraging the development and maintenance of energy industries which will, it is hoped, be better able to compete on the international energy markets.

With regard to security of supply, it is envisaged that a more integrated energy market will seek to improve this for all member states. "Greater interconnection of equipment would make it possible to increase both the solidarity between

Member States and the flexibility of the industry."(10) This would, therefore, increase the availability of emergency resources (in the event of a crisis) and open up increased possibilities for additional trading.

The Commission claims that through the establishment of the IEM the Community could save 0.5 - 1 percent of its GDP.(11) Thus two potential benefits of 'more Europe' are identified by the Commission : a reduction in costs as a result of greater competition and a reduction in certain unit costs as a result of the effect of scale and the optimization of investment or management.(12) The IEM, therefore, aims to create an integrated and liberalised energy sector in the Community. It is a means of further cementing the economic integration of the Community.

The Commission will seek to achieve the aims and objectives of the Internal Energy Market through the legal instruments currently available in attaining the overall internal market. This means that energy products and services fall into the same categories as other products and services. However, energy is distinguished by further additional constraints namely security of supply and the strategic position of energy products.(13) Although these do not imply the necessity for a different legal basis, additional provision could be made for them under the Single European Act, or failing that, under the EEC Treaty.

The advent of the single market, moreover, will not alter certain basic approaches to the strategic aspect of energy, particularly for oil. According to the Commission the single energy market must continue to be seen as one of the aims of the Community's energy policy objectives laid down for 1995 and must contribute towards the attainment of these. This will mean that the IEM "must not result in a watering-down of the diversification objectives and in particular, even in the present circumstances, the objective of limiting to approximately one-third net imports of oil and petroleum products relative to total energy consumption."(14)

Framework of Action by the Community

The Commission lists four types of action to complete the internal energy market(15) : the implementation of the White Paper(16); enforcement of Community legislation; action to protect the environment; and specific energy policy measures which include costs, prices, tariffs and infrastructure. With regard to the first priority, the implementation of the White Paper of 1985, the aim of this is to realise the provisions found in the 1985 White Book on the Single Market with regard to energy. It will involve action in three areas : the harmonisation of technical rules and standards; the extension of public procurement rules to the energy industries and; the approximation of taxation.

The second type of action is the enforcement of Community legislation. Previously, the energy sector has enjoyed

considerable leeway because of its strategic nature. In future those laws concerning the provisions of free movement of goods and services; monopolies, undertakings and state aid will be more stringently applied.

Thirdly, action to protect the environment will include a better balance between energy and the environment. This will involve the harmonisation of safety standards and their application to the cost of producing and using energy, especially in the oil refining industry.

The final type of action will entail specific energy issues which will include costs, prices, tariffs and infrastructure. This will involve a fuller examination of these areas in preparation for 1992 and improvement if necessary. The Commission argues that adequate infrastructure is a *sine qua non* for flexibility, security of supply and ultimately a more integrated Community energy market.(17)

In working towards an internal energy market the Community also has to keep in mind the external relations dimension. The development of the IEM and the cohesion of the energy sector will demand new initiatives in its external relations policy.

A final major consideration of the Commission is the guaranteeing of long term security of supply. Because of the dependence of the Community on imported energy it will be necessary for the Community to keep energy consumption under

control, on the demand side, and on the supply side, to ensure the diversification of supplies and to maintain or increase indigenous energy production. Furthermore, with regard to oil and natural gas, the Commission stresses that close cooperation must be maintained with the other industrialised states, particularly the United States and Japan, "so that all eventualities can be coped with," while guarantees of long-term supplies could be sought from the main producers, especially the Middle-Eastern ones.

The specific proposals relevant to oil include the following : the removal of price obstacles and increased competition on oil markets, brought about by the realignment of pre-tax prices and of prices inclusive of tax owing; oil products to be possibly still subject to higher taxation than competing energy products after 1992 - this is in line with the energy objectives for 1995 of enhanced security of supply and diversification. Finally, the increased coordination and harmonisation of measures to limit oil consumption by member states.(18)

Conventional Oil Supply

However, the IEM proposals centre mainly on the conventional oil supply industries according to Stern et al(19). In so doing they fail to look at renewable energy sources or energy conservation and efficiency. Nonetheless, the oil sector will remain relatively unaffected by the emergence of the IEM unlike the other energy sectors since it is the most

competitive of the energy industries. However, the higher environmental standards will affect the oil industry, especially refining. Despite this two main obstacles to the oil sector will remain. Firstly, the envisaged tax harmonisation will be a problem because of the economic and financial differences among the member states and it would also cause significant budget problems. The second obstacle appears to be the idea of open procurement (markets), which could result in higher costs and increased bureaucracy. Supporters of this would argue that greater openness and competition should reduce prices and costs. With these in mind, and despite whatever decision the Council takes, Leblond(20) sounds a warning that what is at stake for oil, specifically, and energy, generally, is "the very concept of an open European market, not only among its members but to the outside world as well since energy has a particularly international base."

Achievement of IEM

Progress on moving towards the internal energy market by the Commission has just begun and will be some time before it is completed. Already problems are being encountered, which could possibly herald even greater difficulties in implementing such an ambitious programme for energy, given its international nature and the differences between member states. According to Brewin and McAllister, even in 1988 problems were being encountered(21) with the Council only being able to agree on the right of private producers to be

attached to the electricity grid. On the issue of oil refining no agreement was reached because Germany, the Netherlands and Denmark have stricter environmental standards in force than the other member states. The decision on whether national grids should be be common carriers of electricity had to be referred to a working party because of "fears that surplus French capacity would undercut her neighbours' prices."(22)

In general the achievement of the IEM will probably result in conflicts between the Directorates within the Commission, as well as between the Commission and the member states. "Enforcing and policing new initiatives may require considerable additional resources at the Commission, and prompt fear over sovereignty."(23)

Stern et al also further suggest that the Commission will be presented with a conflict in maintaining security of supply at the same time as promoting market forces. This will bring in to question the issue of dependence on non-EC energy supplies and vulnerability to supply disruptions. This could mean that security, in all probability, will decline as an issue of importance as promoting system economies and obtaining lower prices for consumers become the overriding objectives. Another area of potential conflict which Stern identifies is that of the growth in importance of energy-related environmental issues which could coincide with the other objectives of the IEM resulting in additional political tensions between member states.

Benefits

At present it is doubtful whether any tangible benefits will result from the setting up of the IEM. The energy intensive industries, so far, appear to be the most likely beneficiaries, while the domestic consumer, who in theory would appear to greatly benefit from the IEM, appear in practice not to. Moreover, it is unlikely, apart from the German coal industry, that the changes promised by the emergence of the IEM for the European energy industries will materialise because of the unrealistic starting date of 1992.(24) The Commission, contrary to this, believes that once the IEM is established, tangible benefits will flow from it. Under the IEM member governments will find it increasingly difficult to protect uncompetitive fuel and energy equipment industries. Yet, conversely, the advantage of this will be that consumers will benefit from lower fuel prices.(25) "For commercial companies, the focus on European integration created by the 1992 campaign will increasingly cause decisions to be taken in European, rather than a national, context."(26)

Conclusion

It is probably still too early to say what the final benefit will be of the Internal Energy Market. One can only provide conjecture at this stage. It will, it is hoped by the Commission, ensure continued security of supply, specifically

for oil, within the context of an enlarged market. However, this is subject to debate. Ultimately, one may argue that perhaps the Commission should at this stage be looking more towards influencing the external dimension of the energy market and policy rather than the regulation of the internal side of it by increasing co-operation and dialogue with its oil producers especially in the Gulf region and OPEC in general. Furthermore, the Community should be aiming to provide a way of formulating common initiatives to influence other international institutions. With the temporary oil oversupply situation currently prevailing on world oil markets, the decline in United States influence in the international economy, it is not surprising that the international aspects of energy policy are being neglected in favour of dealing with the internal aspects. In other words, the current situation is conducive to dealing with internal regulation. However, for the long term future for oil the international aspect has to be kept alive by the European Community. This does not mean that one cannot see the current moves towards greater integration within the Community as a negative influence on energy policy. It will provide greater cohesion in the energy markets and it is, indicative of renewed moves towards greater integration within the EC. However, caution must be expressed at the current proposals as they stand, particularly in regard to security of supply.

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11. According to the Commission this figure could be doubled if procurement market effects were included. If no single energy market existed the annual economic cost would be between 125 to 250 billion francs.(Petroleum Economist : Vol LV No 10 October 1988 : p331)
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1.3.1 et seq.

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18. For a fuller discussion of this and the potential obstacles to be encountered by the member states in completing the internal energy market see **COMMISSION OF THE EUROPEAN COMMUNITIES** : The Internal Energy Market : *op. cit.*
19. See **STERN J P, McGOWAN F, OSBORNE F et al** : *op. cit.* : p1
20. Petroleum Economist : Vol LV No 10 October 1988 : p332
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23. **STERN J P, McGOWAN F, OSBORNE F et al** : *op. cit.* : p3
24. Within the context of the EC and given divergent divergent differences and priorities among the Member States, the establishment of the internal market is likely to requires a longer lead time than that given.
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CHAPTER 6

EC ENERGY POLICY : SUCCESS OR FAILURE?

Various methods exist for measuring and analysing the success of an institution's policies. For example, Chapman(1) groups the elements of public policy under four headings : objectives, strategies, programmes and administration, with the first defining the direction policy will assume and the last three dealing with the implementation of policy.

Chapman's objectives can be divided briefly into three sections : firstly, those governing the production which include, among others the establishment of "sovereignty over resources and jurisdiction over.....production"; the determination of size and quality and the expansion of the market.(2) The second section consists of those factors determining the supply side objectives, which entail the determination and mobilization of indigenous resources; diversification of supply; protection against supply interruptions and environmental considerations. The final sector is identified as the demand side objectives, which include switching from one fuel to another, and energy efficiency, both overall and sectoral.(3)

In order to realise the specific objectives, certain strategies are needed. This in turn requires programmes and organisations. Strategic considerations identified by Chapman include the relative importance of the energy sector in relation to other economic sectors, the role of interventionist and free-market forces, the time scale for policies and the degree of flexibility needed to cope with unforseen circumstances.(4) Because of the political factor inherent in choosing appropriate policies to suit particular political and economic needs, policies can frequently alter with governments. This may result in governments aiming for reactionary or short term policies rather than the anticipatory or longer term strategies.(5)

The programmes used to achieve the policy objectives can, moreover, be divided into three categories : regulatory - to control exploration, production, safety, trade etc; fiscal - to shape the supply side of the energy economy, distribution and consumption and, finally, participatory - which entails, among others, government participation in the energy sector.

The final section includes the administration of the objectives. According to Chapman this is necessary for the formulation and implementation of policy and involves ministries, governmental departments, regulatory and advisory bodies and organisations. From these four objectives, Chapman argues that the effectiveness of

policies can be ascertained i.e. the success of the policies lies in the framework behind them.

In contrast to Chapman, Kohl, in his functional analysis of institutional arrangements(6), uses the framework of functions provided by international organisations and which he identifies as informational, normative, rule-creating, rule-supervisory and operational.(7) The informational function involves "the gathering and dissemination, analysis and interpretation of data and/or the exchange of information."(8) The normative function involves recommending guidelines of action, setting standards of behaviour etc. In many respects this is similar to Chapman's category of strategies. The categories of rule-creating and rule-supervisory are self explanatory in that they set the standards of behaviour of member states and are legally binding with instruments made available to ensure compliance. This category complies with Chapman's objective of administration.

The final category which Kohl identifies for analysing the effectiveness of policies is the operational function which includes the "allocation of resources or values available to an organisation.....and the sending of technical experts into the field."(9) Within these categories, rule-creating and rule-supervisory are more important and demanding than the informational or normative functions because of the effect they have on key areas of national sovereignty.

On the other side of the spectrum to Kohl and Chapman, one finds the futuristic and econo-statistical approaches respectively employed by Denton(10) and Weyman-Jones(11), among others. Weyman-Jones, in looking at policies that ensure security of supply, employs an economic approach which relies on mathematical formulae to test his propositions and derive his assumptions. It is essentially an approach, while falling outside of the field of international relations, still retains its relevance to the field because of its econo-statistical approach and because of the overlap of International Relations with other disciplines.

Denton, unlike Weyman-Jones, prefers to adopt an economic approach to analysing the development of short and long term energy policies within the EC. He identifies the objectives of EC member states in this area as being on the supply side "to reduce dependence on imports; to diversify types of energy and to diversify sources of energy."(12) The demand side objectives he identifies as the conservation of energy and the diversification of energy to less-energy intensive areas. These objectives are in line with those advocated by the EC. Denton then examines proposals for a short and long term energy policy for the EC within the context of an economic framework. He also, in the course of his discussion, touches on prices, distortions and taxes within the Community. His view, as it stands, is essentially a long term one and therefore futuristic in approach. In this context it diverges from those given by Weyman-Jones,

Chapman and Kohl all of which are concerned with present proposals facing the European Communities. One could dismiss Denton's view as irrelevant but for the fact that it addresses the future considerations of the Community which are pivotal to the EC's continued success.

The examples given above essentially concern the formulating and implementation of energy policy and from these one may ascertain the success of an institutions policies. Therefore, since the objectives, strategies and programmes *per se* (to borrow Chapman's framework) have already been dealt with in the previous chapter, this chapter will serve to examine the effectiveness of the European Communities'(13) energy policies.

Despite the relevance of the above mentioned methods for analysing the effectiveness of an institutions policies, for the purposes of this thesis, the effectiveness of the European Communities' energy policies will be gauged primarily by the use of statistical evidence. This method has been chosen because the specific objectives, as formulated in the EC's programmes, are calculated in statistical terms. It would, therefore, appear to be the most obvious method. However, it has to be kept in mind that apart from the specific goals laid down by the EC, the more generalised aims of the EC's energy programmes are difficult to accurately determine because of their unspecified nature and the fact that their implementation is left to the member states' discretion.

It is hoped, firstly, that by employing such an approach that one can gauge the results (or lack of them) and hence, the overall success (or lack of it) of EC energy policies. Secondly, and more specifically, it is hoped that the objectives will reveal whether the level of imports have declined in line with current policy aims and if indigenous production has increased; whether member states have diversified to other forms of energy, thereby reducing oil's percentage of total energy consumption and whether diversification to other sources of supply (of both energy and suppliers) has taken place. This involves primarily consumption.(14) In sum, whether or not the criteria for ensuring security of supply and demand, between 1973 to 1986 and beyond, have been met.

EC Objectives

Three sets of objectives have been issued by the Commission : 1975 for 1985, 1980 for 1990 and 1985 for 1995.(15) All three sets of objectives according to the EC represent "guidelines for national policies" and serve as "a significant guide for energy producers and consumers in the Community"(16) In other words, the objectives, which are handed down as Council Resolutions, have no legal status within the terms of the Treaties and are not legally enforceable. Decision-making in the Community is based upon the Treaties. If no clause exists in the Treaty then the Council is powerless to act. However, the Member States can

agree, under Article 235, to take joint action on an issue or situation(17). Therefore, since no provision has been made in the EEC Treaty for Resolutions they are not legally binding on the member states. Instead, they serve as a series of guidelines and common goals for member states to attain. Since the Resolutions are unenforceable, there exists no legal machinery within the Community to ensure this. Once the Council has discussed and passed a Resolution, the Commission can only continue to persuade member states to adopt and implement the energy objectives in keeping with the overall aims of the Community.

From these three sets of objectives one can identify several goals which are common to all and which include *inter alia* the overriding priority of the Community : namely the secure and adequate availability of energy on a satisfactory economic basis; reducing dependence on imported energy particularly oil; the development of secure and competitive alternative resources to oil; the containment of energy consumption and the restriction of the share of oil in total energy consumption.

The specific goals with respect to each set of objectives have already been covered in some detail in previous chapters, but common to all are the reduction of the growth rate of energy consumption and oil consumption in particular; the increased use of renewable and alternative energy sources; the diversification of supplies . and; the decrease in oil imports.

(i) The 1975 for 1985 objectives

As discussed in the previous chapter these objectives, given in "Towards a New Energy Policy Strategy for the Community", which subsequently formed the blueprint upon which later initiatives were based and upon which the Council adopted a Resolution(18), covered both demand and supply.

The demand objectives were, firstly, to reduce the growth of energy consumption without reducing the growth of GNP. The internal energy consumption for 1985 was placed at 10 percent below the pre-crisis estimates.(19) The second objective was to increase electricity's share to 35 percent of total energy consumption. This was compared to the (then) current figure of 25 percent.(20) From oil's viewpoint, the main supply objective was that of reducing imports from third countries to account for 38 percent (61 percent in 1973) of total energy requirements or 70 percent of consumption (98 percent in 1973).(21) The overall aim of these objectives, specifically for oil, was to reduce dependence on imported supplies, and thereby ensure greater security and stability of supply through the development of secure resources; improved relations with producer countries; adequate Community machinery to make it possible to take appropriate measures to deal with difficulties and; the organisation of the proper functioning of the market at an EC level.(22)

According to Weyman-Jones, the demand objectives were forecast in terms of improving consumption and were consequently based on the proposition that no energy policy changes would occur in the intervening period.(23) The drawback with such forecasts (used in this period), however, was that they were usually in error by considerable amounts, thereby rendering the objective unmeasurable.

However, these demand objectives, as seen in table 6a, were rather easily met, mainly because the initial demand forecast were so much in error. In the case of indigenous production, the 1975 for 1985 objective was given as 800 mtoe. This was based on a 1973 forecast of 640 mtoe. As it turned out in 1985, with the realisation of the 1985 objectives, this figure was considerably below that projected, standing at 589 mtoe and representing a difference of some 211 mtoe or 73.62 percent of capacity. By contrast, imports were considerably out on earlier predictions in 1985, standing at 724 mtoe compared to a forecast of 1160 mtoe in 1973 and an objective for 1985 (given in 1975) of 675 mtoe. This was up on the 1975 figure by some 49 mtoe or 107.25 percent of capacity. Therefore, the overall demand objectives were significantly in error with the total standing at 1313 mtoe in 1985. This was 162 mtoe (or 89.01 percent of capacity) out on the figure given in 1975. In sum, the demand objectives were met at levels below those predicted with the exception of imports which were above the levels given in 1975. Briefly, this higher figure of 724 mtoe can be accounted for by the increase in

demand due to the lower price of oil from about 1983 onwards and the increase in economic activity in the European states at this time combined with increased production on the part of the oil producers and a decline in production by the consumers.

By comparison to the demand objectives, the supply objectives were set with specific targets in mind. They were aimed at increasing the use of nuclear energy, solid fuels and natural gas while reducing oil consumption.

Table 6b shows the result of the supply objectives which varied greatly between the objective set and the actual obtained. In the case of coal, natural gas and oil production actual figures for 1985 were below those forecast figures given for 1985. Only lignite and peat production was above the initial objective. By comparison, actual import figures for 1985 were above those set for 1985 with coal significantly above the original 40 mtoe, at 78 mtoe in 1985. Oil imports were only marginally above the figure of 540 mtoe by some 8 mtoe.

Therefore, one may conclude that on the supply side the EC did achieve its initial objectives of increasing the use of solid fuels. It failed, however, in this connection, with regard to natural gas where production and imports for 1985 were significantly below those figures set in 1975. The objectives did succeed, although only partially, in reducing oil consumption. Oil production declined but oil imports

rose slightly in response to this. Hence, the objectives set for 1985 did not fulfill significantly the aim of reducing dependence on imported oil nor did they succeed in greatly increasing security of supply. Oil, in 1985 still remained a significant component of overall energy consumption despite measures to reduce its share.

Table 6a :EEC Policy objectives on energy demand 1975 for 1985 (million of tonnes of oil equivalent)

	1973 forecast for 1985	1975 objective for 1985*	1985 actual turnout
indigenous production	640	800	589
net imports	1160	675	724
total	1800	1475	1313

*assuming 50% import dependence

Sources : WEYMAN-JONES T G (1986) : Energy in Europe : Issues and Policies : p81 and EUROSTAT : Energy Statistical Yearbook : 1987 : p46

Table 6b : EEC Policy objectives on energy supply 1975 for 1985 (million tonnes of oil equivalent)

	objective for 1985	1985 actual (EUR 12)
coal		
production	180	134
imports*	40	78
lignite and peat		
production	30	36
natural gas		
production	175-225	127
imports	95-115	90
*oil***		
production	180	151
imports	540	548

* Includes hard coal, patent fuel and coke
** Includes crude oil and primary petroleum products

Sources : WEYMAN-JONES T G (1986) : Energy in Europe : Issues and Policies : p81 and EUROSTAT : Energy Statistical Yearbook : 1987 : p46

(ii) The 1980 for 1990 set of objectives

The objectives for this period were laid out in terms of improvements on past actual performance, rather than on hypothetical forecasts. This meant that the objectives were based on more realistic and accurate data than had been the case for the initial set of objectives, and were thus easier to attain, in real terms. Briefly, the objectives included(24) *inter alia*, firstly, to reduce the degree of Community dependence on imported energy to a level of 50 percent. Secondly, to restrict oil imports to that level attained in 1978 i.e. 470 million tonnes. Thirdly, to increase the use of solid fuels and nuclear energy in power stations so that they would account for 70-75 percent of electricity generation. Fourthly, to restore Community coal production to the 1973 level of 250 million tonnes. Fifthly, to reduce the ratio between economic growth and growth in energy demand from 1 to 0.8 in 1985 to 0.7 in 1990 and finally, to establish and apply rational and transparent price policies.(25)

Of the above objectives, the first two were fulfilled by 1985 : net imports of petroleum (crude oil and petroleum products) fell from 496,3 mtoe in 1980 to 331,2 mtoe in 1985.(26) Oil imports attained the 1978 level of 470 million tonnes between 1980 and 1981 and subsequently declined further to 377,8 mtoe in 1982.(27) These figures

have to be seen against a background of a continuing decline in Community dependence on imported energy from 591,8 mtoe in 1980 to 456,8 mtoe in 1985(28) i.e. energy imports as a percentage of energy consumption declined from roughly 60 percent to 47 percent in the intervening period, thereby fulfilling one of the main objectives of the 1980 programme. The objective for coal production was reached in about 1981/82 when production stood at approximately 245,8 million tonnes for the 10 member states.(29) The reason why the member states were able to attain these goals was due to continuing conservation and demand restriction which had remained in place after the 1970-80 crises. Therefore, by 1985 the objectives had largely been reached - some five years ahead of schedule and this was one of the main reasons behind the decision to formulate new policy objectives for 1995, in 1985.

(iii) The 1985 for 1995 policy objectives

The Community once again adopted the approach of comparing past performance in order to set future objectives. Specific sectoral objectives were set, besides those of the horizontal objectives(30), and included(31) : firstly, an improvement in the efficiency of final energy demand(32) by at least 20 percent by 1995. Secondly, oil consumption is to be maintained at approximately 40 percent of energy consumption while net imports are to be kept at less than 33 percent of total energy consumption in the Community by 1995.(33) Thirdly, the market share of natural gas is to be

maintained and, if need be, increased natural gas exploration and production in the Community will be implemented. Fourthly, the market share of solid fuels is to be increased and the competitiveness of their production capacities in the Community is to be improved(34). Fifthly, hydrocarbons are to constitute less than 15 percent of electricity generated by 1995. Finally, the development of new and renewable sources of energy is to be maintained and furthermore, their use in place of more conventional sources of energy is to be substantially increased.

With regard to the above objectives and given available statistics, the extent to which the targets, to date, for 1995 have been fulfilled can be assessed. However, it should be mentioned that it is possibly too early to assess the full extent of the 1995 objectives, particularly as the 'half-way mark' i.e. 1990 has yet to be reached. But, in looking at the statistics available to date one may be able to identify a trend in the direction that the 1995 objectives will take.

The first objective, namely the efficiency of energy use, has, according to Brewin and McAllister, made insufficient progress, yet again, in 1988 towards fulfilling the target of 20 percent.(35) The second objective : oil consumption as a percentage of energy consumption in 1988, for the EC, was 46.6 percent(36). This figure is above the 40 percent guideline laid down in the original objectives for 1995. But, for the future, this figure is not expected to increase

substantially and is expected to decline in the long term. Net imports, as a percentage of total energy consumption, stood at 45.9 percent of gross domestic energy consumption in 1988, thereby exceeding the 1995 objective of 33 percent by some 13 percent.(37) All indications point to the fact that oil imports will increase in response to a gradual decrease in oil production in Europe(38) particularly in view of the fact that no commercially viable energy source has been discovered as an alternative to oil.

With regard to the other sectorial objectives, Brewin and McAllister state that insufficient progress has also been made on these, particularly in emphasising solid fuels and renewable energy to lessen dependence on oil from Middle-Eastern producers.(39) This reflects the increasing influence of low priced oil imports on the policies of the Community and on the individual member states. It also reflects the continuing preoccupation with implementing and formulating the detailed measures for the Single Energy Market in 1992. Understandably, the issue of 1992 has come to dominate the energy sector in the Community, but it is only one of the objectives laid down in 1985 for 1995, although, at present, it seems to have assumed a significance beyond that intended at its conception.

In general, the 1995 objectives portray a more realistic picture of the expected energy situation, while utilising, according to Weyman-Jones, further stable and meaningful energy ratios(40).

Success or Failure?

Therefore, the energy objectives and guidelines set between 1975 and 1995 reveal the following : that the issue of security of supply continues to be an on-going priority of the Community. It is enhanced by the continuing emphasis placed on reducing the level of imports; the percentage of oil consumption to energy consumption; the reduction in demand for energy, especially oil, and by implication of all three of these, the continued diversification of sources of supply. All of these, it is hoped will simultaneously increase security of supply while reducing the vulnerability of the EC member states to interruptions in the supply of oil.

In the light of this, have the EC's policies and programmes as defined by the aforementioned objectives generally been a success? For the short to medium term the policies have mainly achieved their set aims. Overall, with regard to oil, the level of oil imports has continued to decline. From the early 1980s this was an ongoing trend in the Community. However, this trend at present is being reversed because of the availability of cheap oil supplies, the concommitant decline in indigenous production and an upswing in nominal economic growth in member states. To this extent one can argue that in regard to oil imports, EC polices have failed. However, this is a short sighted view to take. Oil import levels, over the long term, have continued on a

downward trend and one which could continue despite the temporary upswing being experienced at present.(41) What has to be asked is whether this trend is as a result of EC policies, or whether it is the result of the member states' own individual actions taken outside of the Community or whether, in fact, it is a result of market forces being brought to bear on a state's demand and supply patterns. No one factor can be easily singled out as being the main contributory force in this long term downward trend in oil imports. It would appear that it is a combination of concerted efforts by the member states to increase oil(use) efficiency and decrease demand over the long term; aided by EC aims and impetus from the Commission to do so and by the fact that the industrialised states' oil consumption patterns are changing towards increased efficiency and conservation of energy usage. This implies, over the long term, a decline in imports while the decline in oil consumption is being matched by an increase in oil consumption in the developing states.(42)

With regard to increased indigenous production, as being part of increasing security of supply, it would appear that this too has not been the success it was hoped it would be. The 1975 for 1985 programme failed to achieve its production aims for oil. The 1980 for 1990 programme was more successful because of the coming on line of North Sea oil and gas production which boosted overall production in the Community considerably. As mentioned previously, it is unlikely that the 1985 for 1995 production aims for oil will

be fulfilled mainly because of the continuing low price of oil.

Have member states managed to diversify to other forms of energy? Overall, oil still retains its position as the main energy source within the Community, although variations do occur as in the case of the Netherlands.(43) The share of oil to primary energy consumption thus, for member states, has remained significant. This is in spite of the existence of policies designed to ensure a reduction in oil and an increase in the consumption of other energy resources. This masks, nevertheless, the fact that the total share of oil(to energy consumption), at a Community level, has continued to decline since 1973 as the following figures illustrate :

Table 6c : The percentage share of oil to primary energy consumption in the European Community

1973	62.1
1979	55.7
1982	50.1
1986	47.0
1987	46.3
1988	46.7

Source : BP Statistical Review of World Energy : July 1989 : p34

From the above one can ascertain that oil's share of primary energy consumption has levelled off since 1986/87 primarily as a result of lower growth rates in EC member states. Table 5c does not reveal, however, the heavy dependence of certain member states, namely Denmark, Greece and Italy, on imported oil.(44) Therefore, overall for the EC, there has been a reduction in dependence on oil but this has not been reflected on a national level for some member states.

Yet again, one has to ask whether this is a direct result of EC programmes or whether it can be attributed to other factors outside of the Community such as market forces. It is difficult to say with accuracy what has been the main influence but one can suggest that the presence of intentions among member states (to reducing oil's percentage of total energy consumption) has provided some impetus towards attaining a reduction in this. The main factors, however, have been continuing conservation and an overall reduction in demand.

With regard to diversifying to other suppliers, OPEC still remains the EC's main source of supply.(45) The percentage of oil originating from this region has, overall, declined over the years, but OPEC will continue to remain the EC's main supplier principally because of two factors, already touched upon : the sheer size of its proven reserves and its continued over-production which is above current demand.

Therefore, for the short term it is debatable whether or not the EC's policies have succeeded in ensuring a measure of security of supply and demand and with it a reduction in dependence on imported supplies, thereby diminishing overall vulnerability. In certain areas, such as reductions in demand and imports, success has been achieved but it is only apparent from a long term view.

Furthermore, this conclusion for the short to medium term reflects the existence of certain constraints on EC energy policy formulation. These constraints contribute significantly to explaining why the European Communities have failed to develop a successful common energy policy.

(i) Lack of a Mandate

Numerous writers(46) have provided explanations of the constraints on EC energy policies. Drawing upon these, from past experiences and further analysis, one can identify the following reasons : firstly, the lack of an adequate mandate on the part of the Community, combined with institutional inadequacies. This is probably the most obvious reason. Energy policy has no legal status based on the EEC Treaty. In fact, none of the Community Treaties specifically provides for a common energy policy. Their nature, instead militates against the centralisation and co-ordination of policy by dividing responsibility, for energy, in to different sectors. Coal falls under the ESCS Treaty,

atomic or nuclear energy falls under the Euratom Treaty while everything else (oil, natural gas, electricity and hydro-electric) comes under the EEC Treaty. In general, crude oil and petroleum products are covered by the EEC Treaty and classified as a market in "goods".(47) As such, this denotes that the general rules of the customs union are applicable to trade in petroleum products between states, as well as the common external tariff.(48) "This means that the central organs of the Communities are left with the task of harmonising or co-ordinating national policies, and attempting to influence directly the direction of these policies, except where the member states agree to take stronger action.(49)"

A way out of the lack of legal status for energy would be to refer to Article 235 of the EEC Treaty which states that :

> "If action by the Community should prove necessary to attain, in the course of the operation of the common market, one of the objectives of the Community and this Treaty has not provided the necessary powers, the Council shall, acting unanimously on a proposal from the Commission and after consulting the European Parliament, take the appropriate measures."(50)

However, implementation of Article 235 requires unanimity among the member states in the Council of Ministers. This in turn is reliant on consensus being reached among the member states over a particular issue but this is lacking (for energy) because of the differing national views.

(ii) Domestic Constraints

Domestic constraints among member states can be divided into the following sections : energy resources and reserves; economic strength; the sensitivity of the energy sector; political constraints and finally, differing national policies or philosophies in respect of energy.

(a) Energy Resources

Differences exist among and between the member states in connection with energy resources and they can, according to Kohl(51), be divided into three groups : the energy rich states which include the United Kingdom and the Netherlands.(52) These states, on the whole, are not in favour of sharing their resources via the EC energy policies. Then there are the so-called energy poor states which include Denmark, Italy, Ireland, Luxembourg, Greece and Portugal. They are generally reliant on imports for over 50 percent of their requirements. These states have few domestic energy resources, particularly Denmark and Ireland, and consequently are dependent on such measures as conservation and diversification policies to reduce energy imports.

In between these two groups is a middle group of states - France, West Germany and Belgium. These states tend to favour certain proposals to strengthen EC energy policies but not others, depending on the source of the proposal involved. For example, West Germany has considerable

reserves of cheap brown coal and of the expensive hard coal.(53) This has meant that Germany's nuclear programme has been delayed at the expense of high level protection for its domestic coal mining industry.

(b) Degrees of Dependence

In addition to the above, and constituting another factor, is the different degrees of dependence among the member states. As shown in Chapter 2(54), this has serious implications for crisis management as witnessed by the events of the 1970s and early 1980s. Chief characteristics included the adoption of go-it-alone or *sauve qui peut* policies on the part of some member states, particularly France; the establishment and maintenance of bilateral relations with oil producers at the expense of presenting a united front as an organisation or in maintaining multilateral relations; and, as a direct consequence of this, the assumption of differing foreign polices towards the oil producers i.e. not presenting a consistent foreign policy stance in dealings with the major oil producers.

(c) Economic Strength

A further factor in domestic constraints is differing economic strengths. This is primarily revealed in the energy sector of an economy on a national level. The energy sector consists of numerous major industries - all of which contribute differing but significant percentages to the GNP.

Within each primary energy industry (coal, oil, nuclear, gas, solar, wind, wave and biomass) particular characteristics and problems are encountered. A similar situation prevails for the secondary industries involved in energy, such as electricity generation and distribution and oil refining.

In addition, the energy industries consist of diverse kinds of institutions, ranging from small private companies through to national and multinational corporations. Each of these has its own requirements and drawbacks. This means that various contradictory pressures, both internal and external, are exerted by a whole range of groups from producers, consumers through to trade unions and, increasingly, environmental groups on the member states' governments. In other words, energy policy is not arrived at in isolation. According to Commissioner Cardosa e Cunha, the Commission consults as widely as possible when formulating energy proposals and these consultation can embrace Member States, industry, local government, research and academic institutions and third states. "Only after extensive consultation can the Commission produce balanced and rational policy proposals."(55) These external pressures, can in certain circumstances, result in a government taking up a different line of policy to that initially adopted, for example, the pressures exerted by certain environmental groups on governments over nuclear programmes specifically following the 1986 Chernobyl incident. This again, provides an example of the political

factor influencing the outcome of economic orientated policies.

Moreover, in conjunction with the above mentioned, there is the effect of exogenous shocks on prices and supply as seen in the 1970s. This can hamper the maintenance of long term prices and raises the contradiction, that exists in the European Community, between security of price and the security of physical supply. Within the Community emphasis is repeatedly placed on reducing dependence on OPEC oil and particularly from the Gulf states. This, thereby, offers a defence (of sorts) against embargoes and extortionate (and unanticipated) prices. However, a clear distinction exists between the two issues in that a policy which is designed to substitute cheaper imported fuel for a relatively more secure but expensive indigenous sources can, in the end, increase the real price of energy for the consumer. This situation applies similarly when a policy relies on large investments to curtail demand for imported fuel. The converse of this is that a policy which allows relatively expensive fuel to be imported, while withholding a cheaper indigenous source may have the same result. In either case, the only real benefit may be to partially insulate the state concerned against the immediate effect of a future price increase, should a foreign supplier impose one or if one is stimulated by a constriction in international supply. In the meantime, the additional cost will have to be borne by the energy consumers in the state affected, either through higher prices or through subsidies from fiscal revenue.

(d) Domestic Political Constraints

This leads to a consideration of domestic political constraints. Chief among these are the political-economic structure of a state, with a particularly prevalent factor being attitudes towards government intervention in markets. A state's approach to energy policy is conditioned not only by its national resources but also, according to Ray, by the historical factors which have shaped consumer behaviour.(56) This has led to the emergence of diverse national approaches to the role of the state in the economy - or differing philosophies towards energy policy. In the United Kingdom a free market approach is now generally assumed towards the energy sector although the government, through various public entities, continues to play a fairly substantial role. West Germany follows a similar line to that of Britain but one which is characterised by two major factors : that of a large and expensive domestic coal industry and a heavy dependence on imported hydrocarbons to meet its requirements. France, alternatively, has assumed a *dirigiste* approach which entails a centralised state role with numerous instruments to intervene in the market and many public enterprises involved in energy. This enables a more coherent implementation of policy. France also places greater emphasis on its nuclear programmes.

States like Italy are located in between the dirigiste and free-market approach models. In Italy's case it has several

public energy enterprises but the formulation of a stable energy policy has been inhibited by frequent changes in its government. In Italy's case, one can argue, that it is the political factor i.e. the frequent changes of government, which has influenced the formulation and implementation of its energy policies. For example, in 1987, the nuclear programme was hampered by national referenda in November of that year. The referenda saw the abolishment of laws which allowed a governmental committee to "intervene in the siting procedure of new power stations and concerning financial incentives for communes and regions agreeing to site and operate powerplants based on other fuels than hydrocarbons."(57) Moreover, basic progress in improving the structure of the Italian energy economy has also been hampered by difficulties in carrying out the national energy programmes - this was particularly evident in 1986(58) when, for example, the National Energy Plan update of 1986(NEP) was not implemented after the Chernobyl nuclear accident.

Furthermore, among member states there appears to be differing degrees of consensus on the directions that energy policy should assume. This relates to the notion of differing levels of politicization of energy issues. For example, the ideology of the government in power is as important as that which the opposition groups have adopted. Britain provides an example of this, in that since 1979, under the Thatcher government, energy policy has adjusted to assume a more free-market approach. Visible shifts in this direction include the elimination of the British National

Oil Corporation and the British Gas Corporation majority equity interests in North Sea oil and gas production. More recent and on going approaches include the proposed privatisation of electricity, and coal and the privatisation of British Petroleum and British Gas. In the early 1980s the Labour Party appeared to frustrate the government's intentions of closing down unproductive coal mines. Yet, subsequent actions by the Thatcher government, in closing down further coals mines, especially in recent years, have not been altered by Labour's opposition to such moves. In this instance, therefore, it would appear that the opposition group does not have a profound influence on government energy policy formulation. Therefore, the formulation of energy policy is determined largely by the political structure of a system. This, in turn, determines the ability of a state to formulate effective energy policies.

Arguably, these different domestic approaches on the part of the member states go some of the way to explaining why the Community's Commission has failed, in many respects, to come up with a common energy policy and to successfully implement its objectives. Additional reasons, previously touched upon, are as follows: differences in foreign policy attitudes among EC member states which serve to undermine their solidarity, particularly in a crisis. This includes an attitude of *sauve qui peut* in a crisis (primarily noticeable in the 1970s). It also includes differences in relations with the oil majors which can condition foreign

policy attitudes especially if a state is heavily dependent on imported oil. In line with this is, are the disparities in relations among the Twelve with the United States and the Arab oil producers. The establishment of bilateral relations at the expense of the more secure multilateral relations in a crisis is often the easiest but not the most beneficial route for a state to take in seeking a way out of a predicament. The establishment of the Euro-Arab dialogue it was hoped would eliminate a reoccurrence of such events as witnessed in the 1973-74 crisis.

Therefore, to paraphrase Chapman(59), prevailing socio-economic values, the political ideology of the government in power and the nature and extent of regional differences between Member States constitute some of the components and constraints in which the context of energy policy is set and which determine policy. "Values and ideologies determine to a considerable extent the way in which the structure and performance of the energy system is interpreted, the issues that are perceived and the strategies and programmes that are implemented."(60) Because of these circumstantial variables, energy policy (and for that matter any public policy) may be subject to frequent and at times extreme changes.

Maull(61) adds weight to this argument that a political analysis of the European energy policy machinery reveals both internal and external reasons for the failure of it. Although these reasons apply to individual states in the

1970s they are, in many respects, indicative of the European Community. Internally, the energy systems failed because they could no longer function effectively. This was the result of an overburdening of them "by their subordination to wider societal and political objectives and preferences."(62) In other words, in the 1970s energy policies failed to bridge the gap between the changed international oil situation and new constraints on it and the unwillingness of states and their political systems to alter accordingly.(63) However, this is not the whole explanation, which can go further to the core of the political system of a state - that of a lack of legitimacy in formulating energy policy i.e. "the ability of a government to retain public acceptance whilst implementing "sacrifice" measures."(64)

In dealing with the varying levels of intervention *et al*, it is worth noting that extreme differences of view exist among member states as to how much power central EC institutions should have in making policy. Mrs Thatcher in her October 1988 Bruges speech reiterated this point and implied that there are people who want a European 'conglomerate' or 'superstate' exercising 'a new dominance' from Brussels with decisions being taken by an appointed bureaucracy. It is a view which is essentially gaullist in its outlook and conveys the notion of unification by stealth, the centralisation of power, and the erosion of sovereignty, although in reality this is unlikely to occur because of the

consenting ratification required from member states to pass such legislation.

LONG TERM

For the longer term, the success of the EC's goals, as set out in the programmes, will only become apparent should another crisis, in whatever form, occur. Only then will it be seen whether or not EC policies have succeeded in securing Europe's oil supplies sufficiently against interruptions in supply and unexpected price increases and whether dependence on unstable sources of supply has been reduced, thereby diminishing at least in some measure, the overall vulnerability of the West European economies to a disruption in supplies of petroleum.

Therefore, the EC's general goals, as set out in its three sets of objectives, have, in oil's case, largely been unable to fulfill the main objective : that of a secure and adequate availability of oil. This, it will be argued, is because the EC's policies are reactive rather than anticipatory and which will be elaborated upon in the next chapter. It, therefore, means that the European Community, as a whole, remains vulnerable to threats and that its dependence on oil imports is still substantial despite measures taken to alleviate this.

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2. *Ibid.* : p175
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10. DENTON G (1981) : How can the EEC help to solve the Energy Problem? : The Three Banks Review, No 129 March 1981 : p36
11. For a fuller discussion of this see WEYMAN-JONES T J (1986) : Energy in Europe :Issues and Policies : Methuen, London : pp220ff
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13. Hereafter referred to as the EC
14. This is in keeping with basic EC objectives.
15. These have been discussed in some detail in the previous chapter.
    The first set of guidelines were issued in 1968 but nothing substantial was achieved except they expressed a desire to guarantee the long term security of supplies under satisfactory economic conditions.
16. OJ C153 09.07.75 p2
17. Article 235 states :
    "If action by the Community should prove necessary to attain, in the course of the operation of the common market, one of the objectives of the Community and this Treaty has not provided the necessary powers, the Council shall, acting unanimously on a proposal from the Commission and after consulting the European Parliament, take the appropriate measures."
18. OJ C153 09.07.75 pp1-2 and see also Chapter 4
19. COMMISSION OF THE EUROPEAN COMMUNITIES (1974) : Towards a new energy policy strategy for the European Community : Bulletin of the European Communities : Supplement 4/74 : p14
    According to OJ C76 07.04.75 p31 the European Parliament approved the proposal to restrict the growth rate of internal consumption to 3.5 percent per annum instead of 5 percent as originally planned.

20. *Ibid.* : p14
21. OJ C153 09.07.75 p4
22. COMMISSION OF THE EUROPEAN COMMUNITIES (1974) : Towards a new energy policy strategy for the European Community : *op. cit.* : p24
23. WEYMAN-JONES T G (1986) : *op. cit.* : p79
24. OJ C149 18.06.80 p1 and COMMISSION OF THE EUROPEAN COMMUNITIES : The European Community and the Energy Problem : Periodical 2/1980 :26
25. Other less important medium term objectives included assistance to nuclear power station construction programmes, improvements of conditions for supplying nuclear fuels and the solution of safety problems and the search for, development and demonstration of new energy sources.
26. OFFICIAL OFFICE FOR PUBLICATIONS FOR THE EUROPEAN COMMUNITY (OOPEC) : Eurostat : Basic Statistics of the Community : 25th ed : Luxembourg, 1988 : p198 These figures are based on those for the 12 member states.
27. *Ibid.* : p198
28. *Ibid.* : p180
29. *Ibid.* : p190
30. The horizontal objectives were discussed in some detail in the previous chapter.
31. See OJ C241 25.09.86 p3
32. This is the ratio of final energy demand to GNP.
33. OJ C241 25.09.86 p3
34. *Ibid.* : p3
35. see BREWIN C & McALLISTER R (1989) : Annual Review of the Activities of the European Communities in 1988 : Journal of Common Market Studies Vol XXVII No 4 June 1989 : p332
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39. BREWIN C & McALLISTER R (1989) : *op. cit.* : p332
40. WEYMAN-JONES T G (1986) : *op. cit.* : p83
41. This though, appears highly unlikely for the next five to ten years given the collusion of circumstances prevailing on international oil markets at present.
42. In 1971 the non-OECD or developing world and only Eastern bloc states used 24 percent of global crude and NGLs. In 1986 they used 42.8 percent. Without the Eastern bloc states these figures are 13 percent and 25 percent respectively. This spectacular rise in primary energy consumption is now accompanied by increased growth rates. See Energy Economist 88 February 1989 : pp17-19

43. See Table 7 Appendix for these figures.
44. **VAN DER LINDE J G & LEFEBER R** (1988) : International Energy Agency Captures the Development of European Community Energy Law : Journal of World Trade Vol 22 October 1988 : p20
This is the result of differences in energy sources and arguably the varied rates of restructuring the national coal industries during the 1950s and 1960s.
45. See Tables 1 and 2 in Appendix.
46. See **DENTON G** (1981) : *op. cit.*; **RAY G F** (1985) : Energy Management : Can we Learn from Others? : Gower, Aldershot ; **EL AGRAA A M & HU YAO-SU** (1984) : National versus Supranational Interests and the Problem of Establishing an Effective EC Energy Policy : Journal of Common Market Studies Vol XXII No 4 June 1984 and **KOHL W L** (1983) : *op. cit.*
47. **COMMISSION OF THE EUROPEAN COMMUNITY** (1983) : Thirty Years of Community Law : p418
48. According to Article 7 of the Treaty discrimination in the trade of petroleum products is prohibited, on grounds of nationality. Furthermore, the competition provisions apply to production, supply and distribution of hydrocarbons. State aids are allowed only in accordance with Articles 92 and 93.
49. **KOHL W L** (1983) : *op. cit.* : p85
50. **OFFICE OF THE OFFICIAL PUBLICATIONS OF THE EUROPEAN COMMUNITY (COPEC)** (1987) : Treaties establishing the European Communities (ECSC, EEC, EAEC) : Luxembourg : p314
51. *Ibid.* : p87
52. The UK has its North Sea oil and gas reserves and substantial, although economically unviable (at present), coal deposits, while the Netherlands has vast off-shore gas in the Groningen fields.
53. Hard coal mining in West Germany is expensive and consequently heavily subsidised by federal and länder governments and the electricity consumers. It has thus become a political problem with significant relevance for the future supply of electricity.
54. See also Tables 3 and 4 in Appendix
55. See **CARDOSA E CUNHA A** (1989) : Introduction at World Energy Conference, Montreal, September 1989 : Energy in Europe : Special Edition : September 1989 : p5
56. **RAY G F** (1985) : *op. cit.* : p7
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61. **MAULL H W** : The Politics of European Energy Transition : in **GOODMAN G T, KRISTOFERSON L A & HOLLANDER J M** (eds) (1981) : The European Transition from Oil : Societal Impacts and Constraints on Energy Policy : Academic Press, London : p282
62. *Ibid.* : p289
63. Maull states that the failure to resolve the conflict was due to limited resources; lack of creativity; the rigidity and inertia of European energy systems; large investments sunk into existing equipment; long lead times and managerial attitudes which resisted changes and the inability to depart from the established track of incremental and piece-meal change. See **MAULL H W** : *op. cit.* : p289
64. **MAULL H W** : *op. cit.* : p290

CHAPTER 7

CRITICISM OF EC ENERGY POLICY

This chapter represents an overall analysis of the attitudes prevalent in the European Community(1) member states towards formulating and implementing energy policies. Unlike the previous chapter which looked at the EC's objectives specifically, this chapter takes a more general view and offers a possible solution to some of the dilemmas facing the EC in its energy policy choices. The issue of whether or not the EC's present energy policies are representative of a 'common' policy will be analysed and secondly, in line with this, whether these policies are reactive or anticipatory in their implementation. This approach is based on the idea that the EC's energy policies have been the outcome of past events, in the 1970s and early 1980s.

Three Criticisms

Three basic criticisms may be levelled at the attitude that the West European states have assumed towards the issue of energy policy(2) and these apply equally to the EC.

Firstly, EC energy policies arguably reflect too narrow an analysis of the threats facing them. Secondly, they concentrate on too narrow a range of options and finally, they

display an inadequate sense of how total costs and benefits need to be assessed when addressing the future.

Two concerns arise when considering security : that of the probability that an alteration in the situation will occur and that when it does occur, that significant costs will be imposed on a state or person. For energy security this entails substantial reductions in physical supply, usually accompanied with upward pressures on prices, hence reflecting the linkage between supply and price, i.e. a reduction in supply may result in increased upward pressure on prices. In turn, a price increase tends to mobilise additional supplies and then depress demand. This is a basic law of supply and demand and one that applies to all raw commodities. However, in practice and for the implementation and formulation of policy, there is a distinction between price and supply. A price increase, in some instances, may have to be absorbed for some period before supply can expand sufficiently to respond to it. Despite this, "neither analysis nor policy can safely ignore the obvious link between the two. Nor is it generally prudent to ignore the links between the probability and the cost of an undesired change."(3)

This means that in responding to threats to energy security, the probability of the changes that are feared, as well as their potential costs, should be weighed up, while keeping in mind adjustments in prices. Moreover, probability, change and cost are all relative, in that a substantial increase in the price of oil can be as damaging as its abruptness.

However, it is particularly difficult to analyse the costs and benefits of security in relation to probability factors and different time horizons, because of the imprecise nature of security. Therefore, a state faces a dual problem of current pressure of security factors on energy and of apprehension of future changes in that pressure over an indefinite or extended period of time. This means states have to plan energy policy in an atmosphere of multidimensional uncertainty - one which can result in inadequate policies.

At this level, therefore, serious doubts exist about the current perception of Europe's energy security problems and the appropriate responses to it. Many of the policies are the result of intuitive reactions to the previous oil crises of the 1970s.

Therefore, in the event of another crisis, new dangers and ulterior costs could be overlooked with parallel effects on analysis and policy instead of planning in anticipation of a future crisis. As such they are one-dimensional and focus too intently on one particular scenario at the expense of neglecting other potential ones. In other words, European energy policies have failed to react to the domestic and international changes in the energy situation and especially in oil which have occurred since 1973.

A result of such reactive planning is an excessive preoccupation with oil supply at the expense of security threats to other energy forms and sources.(4) One may add

that European energy policies also appear to need "crises as a means to take serious action towards energy adjustment."(5) This is a case of reactive policy making but one which relies on a dangerous strategy : that of allowing two modes of functioning for democratic systems : normal and crisis modes. Maull states that a crisis allows qualitatively different steps to be taken which can mesmerise the political system and the decision-making process, and can increase the authority and legitimacy of governments.(6)

In connection with oil imports, current security policies give rise to some uncertainties. In this context, for example, they are primarily orientated to a major interruption in supply. However, as past experience and possible future scenarios stand, it would seem that the most serious costs are likely to be those incurred by large and rapid changes in oil prices and not those incurred by a reduction in supply. As seen in the two crises of the early 1970s and early 1980,it was the price increases which caused the most damage and not the shortfall in oil volumes, which only had a marginal impact.(7) Yet, there was a notable lack of short-term arrangements or guidelines for dealing with shortfalls and concurrent price rises.(8)

Another criticism which can be levelled at the Europeans, in their attitude towards energy security, is that they give only limited attention to the outcome of energy policies in minimizing the impact of one contingency *vis-á-vis* the possibility that other dangers will occur. In other words,

like causes do not necessarily produce like effects. Instead a state should concentrate on weighing up the ulterior as well as the proximate effects of an eventual crisis. A good example of this is that of the Community's oil supplies from the Gulf. The main aim of EC's energy policies has been to reduce dependence on supplies from this source. However, in achieving this, two dangers have begun to emerge. The first one is the dependence of the Gulf states on the oil income they receive from Europe member states. "In the absence of alternative markets, there is some level of oil income below which the probability of social and political conflict within Gulf states may rise quite rapidly."(9) This can result in international conflict between the different exporters if the income loss appears to be unevenly or inequitably distributed among them. In the eventuality of such an outcome, would it not seem prudent for Europe to reduce oil imports from the Gulf area especially in view of the large excess value of Gulf oil supplies to Europe and of the strategic costs involved in a conflict there? Alternatively, and contrary to Smart's argument, why should Europe reduce its imports from this area if it could ensure a stable and secure supply by the establishment of, for example, special provisions between importer and exporter? In today's market, in a situation of over-supply, a shortfall from one producer could be easily made up by another thereby rendering, for the short to medium term, such an argument invalid.(10) It is in the long term that Smart's argument has validity in view of the reserves found in the Gulf and the increasing non-availability in other producing regions.

The second related danger arises from a decline in America's dependence on oil supplies from the Gulf. Previously, American dependence on oil supplies from the Gulf region was a considerable factor in the oil market. However, American dependence on oil from this region now stands at a substantially reduced level(11) whereas that of Western Europe's and the EC's is still considerable. This could mean that with the US no longer an importer of some significance for the Gulf states, they could tentatively be encouraged to exploit their remaining market power for political gains.(12) This may be extended further by suggesting that with almost three quarters of the world's proved oil reserves in OPEC's possession that, at some time, this advantage over other producers is bound to give OPEC considerable power in the market place. However, the oil over-supply situation, for the moment, yet again, renders the possibility of this happening, highly unlikely. Instead, it appears that it is the importers who have the upper hand over the exporters. Nonetheless, such a scenario should not be ruled out.

These two dangers do serve, however, to remind the European member states that their actions, to reduce the potential costs of energy security contingencies, can have implications for both the producers and the consumers of oil, as was seen in the 1970s, with disunity prevailing among the industrial states over the correct course of action to assume towards OPEC. As discussed previously, attempts by states to go it alone in securing supplies during a crisis may reduce the

security of the other importers by undermining the flexibility of the international market. This would further exacerbate the security problem already created by the loss of flexibility on world markets - a result of structural changes in the world oil market since the beginning of the 1970s : "the loss of control over production by vertically integrated companies to host governments, the fragmentation of the oil trading system, and the rest."(13) An example of the changed oil situation is the downstream integration by Kuwait into West European markets which began in 1983 as a response to the shrinking of its oil-export revenues.(14)

The EC and the IEA

While in the actual formulation and implementation of a common energy policy the EC has encountered numerous and often serious setbacks, it is in the institutional area that it has advantages over such an institution as the IEA, although Van Der Linde and Lefeber would disagree with this.(15) The EC is equipped with legislative powers and can take decisions which are binding on member states. This is borne out by the number of regulations, directives and decisions in force.(16)

A reason for the lack of agreement on specific measures is to be found in the provisions of the Treaties governing the European Communities. As mentioned previously in Chapter 4, energy policy is not provided for under the Treaties and this hampers the formulation and implementation of legislation. A further factor in this counter argument is that the Council of

Ministers is further constrained by the variations among member states in regard to vulnerability, capability and interests. This has resulted in the almost non-achievement of a common policy. The lack of provision in the Treaties can be overcome using Article 235 but this, in turn, relies on unanimity or more increasingly a majority decision on the part of the member states.

This situation, therefore, means that even though in principle the Commission and the Court of Justice are equipped to settle disputes and enforce legislation, there are few energy related rules to enforce. In turn, the enforcement of energy rules relies on the will of the member states implementing them at a national level. This brings into question the uniformity among member states in transposing EC law into national law. In reality, therefore, a fine line exists in EC decision-making between the decisions taken by the Council to which the member states have agreed and the actual implementation of these decisions at a national level.

Furthermore, the EC has a considerably larger budget at its disposal than the IEA and grants considerable amounts of money for research and development e.g. in December 1988 ECU 5.6 million was granted to technological development projects in the oil and gas sector.(17) In 1989 the Commission launched a new five year energy technology programme called "Thermie". It will cover the areas of energy efficiency, renewable energies, hydrocarbon development and the clean use of coal.(18) Yet, overall it appears that the Commission's

multi-annual budget for total research reveals how little it has at its disposal for expanding the number of programmes with which it hopes to stimulate co-operation among the member states.(19)

In many respects these benefits are offset by two factors : firstly, the slow pace of decision-making due partly to the reluctance of member states to relinquish their sovereignty and partly due to the decision-making machinery in place; and secondly, reluctance on the part of member states to support projects from which they do not directly benefit. An example of this is support (by members) of the Community's regional policy. Some discord exists among the wealthier states at having to support the relatively lower income group of states such as Greece and Portugal. This is reflected not only in regional energy policy but also in other EC policies.(20)

This argument may be taken a step further by arguing that whilst, as does Kohl(21), the basic components for effective Western energy co-operation appear to be in place including the European Communities, what is still needed (particularly in the EC's case) is the adaption and extension of existing arrangements to strengthen and broaden the scope of its present functions. The more successful arrangements of an institution usually rely upon carefully defined objectives but with some flexibility to adapt to changes in the international energy context. The EC has attained this but doubts persist over the definition of its objectives, particularly if one regards EC energy policy as reactive rather than anticipatory.

A common energy policy?

Therefore one has to ask, in view of the above, whether the Community has a *common* energy policy. El Agraa and Hu(22) have raised this question and they argue that the answer depends on what is meant by 'policy' and what constitutes a 'common' policy. "If, by a policy, one means a combination of a clear vision of the future, a coherent set of principles, a range of policy instruments adequate to the objectives that are set, and the existence of sufficient legitimacy and authority to carry the measures through, it follows by definition that Europe does not have an energy policy."(23)

Alternatively, policy according to Hilsman is "...what is to be done about the situation."(24) This is a simplistic definition and begs the question of whether such a concept as policy exists. As Vital remarks : " there are.....a great many policies on a great many matters, co-existing, often uncomfortably and uncertainly, at various levels of definition, priority and recognition."(25) Moreover, it becomes increasingly difficult to precisely define policy as one moves from the specific to the general because of the inconsistency and incoherency implicit in formulating decisions. This means that 'policy' should be seen merely as the outcome of a number of decisions relating to a particular sector or issue and placed within a general framework relating to the desired objective. Since this is continually changing, it makes it difficult, and at times nearly impossible, to

define 'policy' accurately. If this is the case, then the European Community's energy policy is difficult to define adequately because of the continually changing context in which is is formulated. However, for the purposes of this thesis, El Agraa and Hu's definition of policy is more pertinent, precisely because it provides a clearer definition of the factors making up 'policy'.

In defining what is meant by a 'common' policy, El Agraa and Hu have based theirs on the supranational or integrationist view of what constitutes a common policy and that, therefore, no such policy exists "since much of the conception and implementation of energy policy remains with the member states."(26) In other words, as Hilsman suggests, "[p]olicy is often the sum of congeries of only vaguely related or even entirely separate actions."(27) It is more a result of bureaucratic momentum and politics than of conscious decision making. In a similar vein, the 'common' element of policy lies with the actions (or lack of them) of the member states. Should they, at a simplified level, all decide to implement all Community decisions, regulations and directives then arguably a 'common' energy policy would exist. However, with the exception of regulations, the implementation of decisions, directives and recommendations (depending on the circumstances) is left very much up to the member state concerned. Resolutions have no legal basis in EEC Treaty.

The EC's energy policy, therefore, has to be seen as essentially a convergence of national policies towards a

common goal. As Weyman-Jones states "...Community energy policy remains simply a collection of individual policies..."(28) It is one which presupposes a convergence of national interests on the member states' part. This is dependent on their perceptions, material resources, mutual trust and arrangement of "package" deals. Thus, no single common energy policy exists for EC member states to comply with. Its policy essentially remains a series of guidelines and recommendations, subject to implementation by the variations in vulnerability, capability and interests which exist among the member states.

The need for a common policy

In view of the aforementioned, does the European Community need a common energy policy? Would it not be sufficient for it to co-ordinate the individual member state's energy policies? However, this would not be sufficient since, as Denton states, the answer has to be sought in the long term, in economies of scale, increased bargaining strength, decreased vulnerability, or the need to maintain certain other common policies particularly those aimed at common or harmonised pricing and fiscal policies. The latter could avoid a number of problems created by separate fiscal jurisdictions.(29) As El Agraa remarks :

> "..... the justification for a common energy policy depends on the vision that one has of the Community and of what it should become. If one believes in the ever closer working together of the peoples of Europe, the question becomes : why should the Community not work together in this vital area? It becomes a question, not of strict separation of

> powers but of combining national and Community initiatives towards common goals."(30)

The above, therefore, allows one to suggest that, as briefly mentioned, the European Community's policies are essentially reactive and not anticipatory. One could suggest that the established European view towards energy security takes the following line of reasoning (and as observed from stated objectives) : firstly, that consumption of energy is to be reduced either by improved efficiency of conversion or through the use of the lowest level of energy economically possible. Secondly, the production of indigenous energy is to take precedence in order to ensure greater security of supply but not at the expense of excluding comparatively secure and cheaper imports of energy. Thirdly, if it is impossible to meet the first two criteria or if demand is greater than supply then the following have, to some extent, been observed by member states : that oil imports are to be reduced particularly from OPEC states and the Gulf and, if possible, eventually to be eliminated and that these imports, particularly those from the Middle-East and North Africa, are to be replaced by alternative fossil fuel imports.

The final criterion is that emergency stocks are to be established and maintained at specific levels and to be used in the event of a crisis. A predetermined formula, for the allocation of oil and other sources of energy, will apply for stocks should supply fall below a stated threshold level.

The above view however, is superficial and one dimensional. It is more applicable to a theoretical energy situation than to those which prevail in reality. In other words, it fails to take into account the volatility and increased flexibility of the international oil scene.

If one combines the above view with that of the established European view towards energy security, then the outcome is a Community attitude towards energy security which is based on past convictions and notions which still influence the formulation of energy policy. According to Smart(31) these views have been shaped by the experiences of the 1970s. "Only this can explain the patterns of assumptions underlying current policies and statistical projections."(32) Until the beginning of the 1980s it was thought, by member states, that to meet energy demand by any other form of energy was preferable to relying on imported OPEC oil. This signifies that importation of coal and gas from any sources within, as well as without, of the OECD was preferable. However this involved an undesirable outcome for the member states. As Smart explains : "...governments were singularly ill-prepared, as a result, for the discovery that a non-oil import from a non-OPEC source might arouse fears about energy security, or that their respective views of the risks involved might then prove sharply divergent."(33) From this belief and also the divergence over the Soviet gas pipeline issue, arose the simple assumption that certain non-OECD imports (in this instance gas imports from the USSR) are less secure than others. In order to secure them sufficiently, at the very

least, quantitative (or even proportional) limits on the quantity imported from a particular non-OECD exporter were required.

This assumption brings to light a new element in discussions about oil imports from OPEC : the fact that for the European member states, previous experience of turbulence in the supply and price of oil has been compounded by OPEC members holding vast reserves of oil. As indicated in previous chapters, 60 percent of Western Europe's primary energy in 1973 came from oil of which the Middle East alone supplied 66 percent and Africa another 22 percent. In 1978 oil provided 48 percent of primary energy requirements of which Africa and the Middle-East continued to provide 75 percent of the oil required.(34) By 1983, these figures had shifted considerably : the Middle-East and Africa only provided 48 percent of oil consumed of which oil accounted for 48 percent of overall primary energy consumption. Thus, between 1973 and 1983 imports from the Middle East fell from 40 percent to 13 percent of total energy demand and those from Africa from 13 percent to 10 percent.(35) Despite this decline, however, the percentage of oil imported to other energy forms remained higher than other major elements of primary energy supply.

It is, therefore, not surprising that this preponderance underlies European fears about the security of their oil imports. Consequently, this situation has resulted in increasing emphasis being placed on the need for a balance between available energy sources and the inherent dangers

resulting from overdependence. But, as mentioned previously, are the dangers resulting from such a situation so high that they warrant extreme measures? Given the present situation on the international oil markets, and as stated earlier on in this chapter, perhaps the EC member states are being unduly cautious in certain aspects? However, despite the aforementioned, the final criteria by which EC member states governments assess energy security and the means at their disposal to contain it are : the kinds of fuel imports and sources which are insecure, and the amounts involved.(36)

For the longer term perhaps this view is too optimistic. The EC in a future crisis is unlikely to be able to sustain a concerted attack upon its members because of a major flaw in its policies - they are reactive rather than anticipatory having been borne out of their respective member governments reactions to the crises of the 1970s and 1980s rather than the present situation. The objectives : security of supply, reducing unreliable sources of supply; reducing dependence on oil in overall energy consumption etc, are aimed at the situation which prevailed in the international oil markets in the 1970s and early 1980s and which no longer is present in its previous form.

The latest objectives for 1995, with the exception of those for the Single Energy Market, fail to take into account sufficiently the changes which have occurred on the oil markets since 1983 : namely the oil over-supply situation or excess oil production. In essence the 1995 objectives are

largely an up-date of earlier statements. They contain no new features. Security of supply always will and should remain a prime consideration for any state particularly given the primacy of economic growth/security over most other aspects of security within the modern advanced industrial state. It is the other objectives concerning oil, specifically reducing dependence on Middle-Eastern suppliers and the reduction of oil in overall energy consumption which do not corroborate with present day circumstances. The Middle-East is likely for the forseeable future to remain, politically and militarily, an unstable supplier with a number of factors mitigating in its favour. These include the fact that this region of the world contains some of the largest reserves of crude oil; it has lower production costs per barrel of oil than most other producers and downstream integration by the oil producers as seen by Kuwait in recent years means that the oil producers now have a far greater stake in the oil markets than that of just producer. They now have a more direct outlet for their product and thereby a greater interest in ensuring continuing markets for it.

Furthermore, the oil over-supply situation or oil 'glut' means that for the West European states it is far more feasible to purchase cheap, although 'insecure', oil supplies than to rely on more expensive alternative energy forms. All this denotes that the European states for the future are likely to remain dependent on the Middle-East and the Gulf region in particular for the majority of their oil supplies. This realisation is in one sense not apparent in their energy

policies. In another sense the EC member states have reconciled themselves to the idea that their consumers will become increasingly reliant on foreign oil. This is expressed in their on-going concern with reducing oil as a percentage of total energy consumption.

With regard to the objective of reducing oil's percentage in overall energy consumption, should the member states pursue such an active policy when no readily acceptable alternative is available? Would it not be better to continue using oil as an energy form instead of switching back to coal which entails not only technological problems but poses environmental ones as well? In answer to this, one can argue that liquid fuels still hold considerable attractions for consumers, particularly in regard to transportation (easy to handle, ship etc in relation to coal).

The above reasons and the facts that the Middle-East is and will remain the main supplier of oil, and that the EC member states for the future(37) will remain reliant on oil as their main energy source, all point to the conclusion that energy policy should be set in a wider context than it is. OPEC, despite its activities in the 1970s and early 1980s can no longer be seen as a threat to the Western consumers. It is now plagued with internal rivalries and the question of persuading members to comply with quota allocations in an attempt to stop the flooding of the international oil markets. Instead, what the European Community should be concerned with(38) is the fact that the Community and the main oil

exporters are natural trading partners. Both are reliant on each other, either for oil or for the income that is generated from such trade. The EC's tentative relations with the OPEC, OAPEC and GCC states is insufficient at the moment and further positive steps need to be taken towards consolidating and improving relations between them. For it is on such relations that the Community's oil supplies will mainly depend until a compatible, acceptable and relatively cheap alternative is found to oil.

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2. SMART I : European energy security in focus : in GASTEYGER C (ed) (1985) : The Future of European Energy Security : Frances Pinter Ltd, London : p154
3. *Ibid.* : p155
4. Similarly so, with an equal preoccupation with fuel, to the exclusion of other energy assets, and also with imports, to the exclusion of security problems affecting indigenous supplies.
5. MAULL H W : The Politics of European Energy Transition : in GOODMAN G T, KRISTOFERSON L A, HOLLANDER J M (eds) (1981) : The European Transition from Oil : Societal Impacts and Constraints on Energy Policy : Academic Press, London : p289
6. *Ibid.* : p289
7. In neither instance was the shortfall sufficient to trigger the emergency allocation schemes already in place.
8. It was only in December 1981 that the IEA Governing Board formulated the first steps of an agreed policy on 'sub-crisis' disruptions of the market.
9. SMART I : *op. cit.* : in GASTEYGER C (ed) (1985) : *op. cit.* : p156
10. This line of argument will be elaborated on further on in this chapter.
11. See Tables 1,2 and 3 - Appendix
12. A corollary to this is that Western Europe can no longer rely on the US to defend its interests in this region since the two interests do not coincide any longer.
13. SMART I : *op .cit.* : in GASTEYGER C (ed) (1985) : *op. cit.* : p162
14. THE ECONOMIST : 10 December 1988 : "Drowning Down-stream" : p95 and THE ECONOMIST : 24 June 1989 : "Tomorrow the World" : p86 : Kuwait currently owns 4800 petrol stations and two refineries in Western Europe thereby securing a market for some of its oil output. Downstream assets are seen as guaranteeing an outlet for oil products especially when the international oil market is experiencing an over supply, as now.
15. For a fuller discussion of this see VAN DER LINDE J G and LEFEBER R (1988) : International Energy Agency Captures the Development of European Community Energy Law : Journal of World Trade, Vol 22 October 1988
16. For a full list of these see OFFICIAL JOURNAL OF THE EUROPEAN COMMUNITIES : Directory of Community Legislation in Force and other acts of

Community institutions : Vol 1 December 1988 : pp593ff
Of the 94 pieces of legislation currently listed in the Directory (as at December 1988) 15 are Regulations, 11 Directives, 32 Decisions, 16 Recommendations, 17 Resolutions and 3 can be listed as other. According to Article 189 of the European Economic Community Treaty a Regulation is defined as having general application. It is binding in its entirety and directly applicable in all Member states. A Directive, accordingly, "shall be binding, as to the result to be achieved, upon each Member state to which it is addressed, but shall leave to the national authorities the choice of form and methods." By contrast, a Decision is binding "in its entirety upon those to whom it is addressed." According to the Article recommendations and resolutions have no binding force. This means that over half of the legislation in force is binding in some way upon member states with regard to all areas of energy. For oil, apart from the Directives, Regulations and Decisions applicable to all areas of energy, only 18 pieces of legislation have relevance to oil and gas of which 11 relate to oil, 1 to gas 6 to oil and gas or hydrocarbons. Of the 11 relating to oil they deal mainly with oil stocks, prices, inter-Community trade, registration of imports and exploration.

17. **COMMISSION OF THE EUROPEAN COMMUNITIES** (1988) : Bulletin of the European Communities Vol 21 No 12 1988 : p114
18. See **CARDOSA E CUNHA A** (1989) : Introduction at the World Energy Conference, Montreal, September 1989 : Energy in Europe : Special Issue : September 1989 As such, energy technology does contribute towards energy security.
19. According to **BREWIN C and McALLISTER R** (1988) : Annual Review of the Activities of the European Communities in 1987 : Journal of Common Market Studies, Vol XXV No 4 June 1988 : p440 : The Commission in 1987 successfully held out for a total of some 7 billion ECU against a determined British attempt to limit provision to less than half this amount.
20. The Commission is aware of the difference in economic well-being between member state and regions and plans to narrow such differences by the allocation of 52 billion ecus by 1993 to such regions and states. This will be in the form of Structural Funds of which substantial amounts (from this Fund and from other sources) will be spent on energy projects. See Energy in Europe : Special Issue : September 1989 : p5
21. **KOHL W L** (1983) : International Institutions for Energy Management : An American Perspective : Gower, Aldershot : p99
22. See **EL AGRAA A M & HU YAO-SU** (1984) : National

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23. *Ibid.* : p260
24. **HILSMAN R** (1987) : The Politics of Policy Making in Defense and Foreign Affairs : Prentice-Hall Inc, New Jersey : p32
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26. **EL AGRAA & HU YAO-SU** (1984) : *op. cit.* : p260
27. **HILSMAN R** (1987) : *op. cit.* : p61
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30. **EL AGRAA A M & HU YAO-SU** : *op.cit.* : p260
31. **SMART I** : *op. cit.* : in : **GASTEYGER C** (ed) (1985) : *op. cit.* : pp151ff
32. *Ibid.* : p152
33. *Ibid.* : p152
34. *Ibid.* : p152 See also Tables 8 and 9 - Appendix
35. *Ibid.* : p152
36. *Ibid.* : p152
37. One can give this figure, conservatively, at about 20 years.
38. Equally too, the United State and Japan and other nations.

CONCLUSION

The purpose of this thesis was, briefly, to analyse the concept of energy security with particular emphasis on oil imports, in relation to the European Community. This incorporated two aspects : that of the potential vulnerability of the Community and the measures taken to insure against such a situation and decrease vulnerability, and the fact that EC energy policies are a result of reactive elements at the expense of anticipatory ones.

In view of the initial aims and the evidence presented herein, the following conclusions have emerged : in general, that the issue of security of supply, in relation to oil, still retains its relevance, for now and the future, despite the continued oil oversupply situation prevailing on the markets. Secondly, that the European Community member states', as a whole, are vulnerable. This is because, as indicated in Chapter 1, they have a high level of imports from foreign sources, these sources, being particularly unstable ones, having a past history of using oil supplies as a political weapon. Furthermore, because of the level of usage in the economies concerned, a high cost would be incurred if a crisis or shock situation happened. In vulnerability's case (as opposed to that of a 'sensitive'

economy), the costs would potentially be much greater because of the higher level of reliance on imports for a greater section of the economy. The degree of vulnerability in the EC is determined not only by history and economic circumstances but also by policy instruments and measures available. The latter are important in reducing the overall degree of vulnerability.

The thesis has shown that the issue of security of supply has been a central theme of the European Community's energy policy since 1973. Only one member state, the United Kingdom, is a net exporter of oil. As demonstrated, for the forseeable future, the Community will remain (energy and particularly oil) dependent. Throughout the 1970s and the first half of the 1980s, the EC was able to reduce its dependence on imported oil so that by 1985 net oil imports were below 32 percent of total energy consumption. However, the EC continues to import over 70 percent of its oil requirements and since 1985-86 these percentages have started to rise, accompanied by another increase in the Community's import dependence. By the mid-1990s, on the European Community's own estimates, it could be importing over 50 percent of its energy needs, and around 80 percent of its oil needs.

Therefore, the Community's major vulnerability is its dependence on oil imports to meet its requirements.(1) Unlike imports of gas, coal and uranium, oil imports cannot be extensively diversified. Instead, its imports are

becoming increasingly concentrated on sources within the Persian Gulf region as extra or non-OPEC sources are depleted or prove uneconomical to continue producing.

However,it is difficult to generalise about energy security in relation to the European Community because of the multitude of differences which exist among member states, including differences in resources; in economic philosophy over market systems; in relations between the oil producers and themselves and the existence of competing commercial interests. All of these factors, and more, as outlined in Chapter 6 have resulted in divergences over energy policies, which have impacted on the EC's policy instruments with an often negative result and, which are reflected in the EC's energy policies.

The result of the EC's energy policies, particularly those relating to oil, have been mixed depending on whether one is looking at them in the short term or in the longer term. In the short term EC energy policies have succeeded in improving the efficiency of energy use; in opening up further the internal market; in limiting, to an extent, the level of imports and; in increasing the use of other energy forms, specifically natural gas and coal. In the long term, however, EC energy policies reflect that it [the EC] has not succeeded in agreeing on a common energy policy, in general, and a common external energy policy, in particular. The latter is important for the future, continued supply of oil

and the lack of it is seen in the decrease in momentum, in the EC, in on-going supply diversification.(2)

This situation is compounded by the nature of the decision-making institutions and processes. The preparation of policy is a laborious process and progress is often slow. Long delays are often encountered between the submission of a proposal by the Commission and the acceptance of it by the Council. But the main reason behind the lack of a common energy policy is that of an inadequate mandate in the EC Treaties specifically providing for energy as a whole entity, and oil in particular. None of the Community Treaties provides for a common energy policy. Instead responsibility for the various energy forms is divided up between the Euratom, ECSC and EEC Treaties, with oil falling under the EEC Treaty in which no provision is made for a common or even a general policy. Instead oil is classified as a product and falls under the articles governing these. Decisions, which are legally binding, are reliant upon the respective clauses or articles in the Treaties and if there is no clause in the Treaty, then the Council has not the power to act. However, the member states, under the EEC Treaty of 1957, do have recourse to Article 235 which allows the Council to take the appropriate measures as necessary. Despite this measure, the EC's energy policy, as it now stands, apart from directives governing stockholding and emergency measures, remains essentially a series of guidelines and recommendations for the member states to conform to at will. In other words, there are few energy

related rules to enforce since few rules has actually been created in the energy sector.

This raises, for further consideration, the question of whether, within the Community, one has to resort to law to achieve a desired goal. It also brings into question whether the EC has a 'common' energy policy, as there is a 'common' agricultural policy or a 'common' market *per se*. The answer to this appears to be no, because of the lack of a legally enforceable mandate, as discussed. It would require the implementation of new articles within one of the Treaties. This in turn raises the following consideration of whether one should talk of a 'common' energy market. A 'common' market in energy could only exist if it were all the same to the member states. But, since each member state is different - different needs, interests, vulnerabilities, sources of supply etc - how can there exist a 'common' energy market? The implementation of the Internal Energy Market(IEM) in 1992 is a response to the integrative motive at the heart of the whole EC, which has always been a significant consideration of the Community though, in some periods, it has remained submerged. However, the implementation of the IEM across the broad range of variations which exist among and between the member states could prove to be a lengthy process.

However, as they stand, the EC's energy policies would appear to be a collection of essentially reactive (and in this sense, negative) policies. This means that the energy

policies are directed to short term considerations. For long term energy policy to remain effective, it should be separated from short term considerations and directed towards policies which retain and increase energy efficiency and diversification.

It would increasingly appear, therefore, that an alternative course of action, on the part of the member states, is called for. Whatever measures are taken domestically they will remain fundamentally short term in nature. It is only at the international level that the energy problem can be resolved. Each state's own priorities, interests and political considerations, as mentioned, have resulted in a limited degree of co-operation. In order to widen or increase co-operation, to ensure greater stability and reliability of supply, the EC will have to commit itself to greater co-operation with the Arab oil producers. This response is conditioned by one principal factor : the realisation that the EC's future energy security is highly dependent on the actions of the Persian Gulf oil producers. This attitude would entail increased bilateral and multilateral relations, both economically and politically between the consumers and the producers. At the international level, therefore, the EC could prove to be a valuable forum. However, this response is dependent on the member states.

In the end, however, complete security of supply will never be achieved because insecurity is in the nature of oil. As Gasteyger observes :

> "[a]part from the security aspect of economic costs, risks of accident, industrial conflict and environmental prohibition always hang over indigenous supply - however autonomous such supply may become over the years. In other words, the search for complete energy security will remain as vain as that for complete military security. It may even be counter productive. There are, and will be, forms of insecurity and challenges to security that are either not forseeable or simply not controllable....[W]hat matters is to understand the general trends of change and challenge, and to strike the best possible balance between the risks of traditional sources of supply on the one hand, and the costs of alternative ways on the other."(3)

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APPENDIX

TABLE 1 : CRUDE OIL IMPORTS* 1988 : Mtoe[1]

	Total Imports	Total OPEC	%OPEC: Total Imports	Total Gulf[2]	%Gulf: OPEC	%Gulf: Total Imports
Total EUR 12	421	223	52.9	127	56.9	30.1
FDR	71	35	49.2	9	26.1	12.8
UK	45	15	34.4	11	68.2	23.4
Italy	76	50	65.6	27	54.4	35.7
France	74	30	40.5	20	65.4	26.5
Netherlands	48	31	65.2	23	73.0	47.6
USA	290	155	53.7	78	50.2	26.9
Japan	165	119	72.2	96	80.9	58.4
Total OECD	965	542	56.2	333	62.0	34.5
Total OECD Europe	478	254	53.1	150	59.2	31.4

1 Figures rounded off
2 Includes Saudi Arabia, UAE, Iran, Iraq, Kuwait, Qatar and Neutral Zone
* Includes NGL(Natural Gas Liquids) and Refinery Feedstocks

Source : INTERNATIONAL ENERGY AGENCY : Quarterly Oil Statistics and Energy Balances : Ist Quarter 1989 : IEA/OECD, Paris, 1989 : pp166-333

TABLE 2 : TOTAL PETROLEUM PRODUCTS IMPORTS 1988 : Mtoe[1]

	Total Imports	Total OPEC	%OPEC Total Imports	Total Gulf[2]	%Gulf: OPEC	%Gulf: Total Imports
Total EUR 12	161	27	16.5	14	50.9	8.4
FDR	46	2	5.1	1	27.2	1.4
UK	8	1	5.0	(1.5)	3.7	0.2
Italy	19	9	47.5	5	58.0	27.5
France	22	4	20.5	2	51.4	10.5
Netherlands	34	6	18.6	3	50.0	9.3
USA	70	26	36.8	3	12.8	4.7
Japan	62	35	56.6	27	76.2	43.1
Total OECD	332	91	27.5	46	49.9	13.7
Total OECD Europe	189	28	14.6	14	51.8	7.6

[1] Figures rounded off
[2] Includes Saudi Arabia, UAE, Iran, Iraq, Kuwait and other OPEC.

Source : INTERNATIONAL ENERGY AGENCY : Quarterly Oil Statistics and Energy Balances : 1st Quarter 1989 : IEA/OECD, Paris, 1989 : pp166-333

TABLE 3 : OIL SECURITY POSITION OF THE INDUSTRIALISED COUNTRIES : 1987 (Mtoe)

		WEurope Total	EC Total	FDR
1.	Energy Consumption	1075.3	1053.0[3]	271.1
2.	Oil Consumption	470.4	465.8	114.6
3.	Oil Consumption as a % of Energy Consumption	43.7	44.2	42.2
4.	Net Oil Imports	296.3	352.9[4]	113.7
5.	Oil Imports as a % of Oil Consumption	63.0	75.7	99.2
6.	Oil Imports as a % of Energy Consumption	27.5	33.5	41.8
Oil Consumption Patterns :*				
Sectoral Distribution of Oil Consumption (%)	Industry[1]	26.7	11.7	12.1
	Resi/Comm[2]	25.7	23.5	19.3
	Transport	47.5	42.7	23.6
Oil as % of Sector Consumption of Energy	Industry	38.8	23.9	34.9
	Resi/Comm	35.1	36.5	46.5
	Transport	98.4	98.3	99.0

* Figures rounded off
[1] Includes non-energy use
[2] Includes public and agricultural sectors
[3] Inland consumption
[4] Crude oil and petroleum products imports

TABLE 3 : CONTINUED

		UK	ITALY	NETHERLANDS
1.	Energy Consumption	208.7	148.9	65.9
2.	Oil Consumption	75.6	88.2	23.6
3.	Oil Consumption as a % of Energy Consumption	36.2	59.2	35.8
4.	Net Oil Imports	-49.7	89.9	26.6
5.	Oil Imports as a % of Oil Consumption	-	100[5]	-
6.	Oil Imports as a % of Energy Consumption	-	60.4	40.4
Oil Consumption Patterns :*				
Sectoral Distribution of Oil Consumption (%)	Industry[1]	11.3	15.2	17.2
	Resi/Comm[2]	5.1	14.6	3.2
	Transport	27.9	27.6	17.7
Oil as % of Sector Consumption of Energy	Industry	35.7	39.0	40.4
	Resi/Comm	12.5	43.4	8.2
	Transport	99.0	99.0	99.0

[5] Approximate

TABLE 3 : CONTINUED

		USA	JAPAN
1.	Energy Consumption	1865.7	371.7
2.	Oil Consumption	766.4	207.7
3.	Oil Consumption as a % of Energy Consumption	41.1	55.8
4.	Net Oil Imports	309.5	216.1
5.	Oil Imports as a % of Oil Consumption	40.4	100
6.	Oil Imports as a % of Energy Consumption	16.6	58.1
Oil Consumption Patterns :*			
Sectoral Distribution of Oil Consumption	Industry[1]	11.7	23.2
	Resi/Comm[2]	5.9	15.1
	Transport	35.0	23.6
Oil as % of Sector Consumption of Energy	Industry	34.0	46.8
	Resi/Comm	19.0	56.3
	Transport	99.0	99.0

Sources : INTERNATIONAL ENERGY AGENCY (1989) : Energy Policies and Programmes of IEA Countries : 1988 Review : IEA/OECD, Paris
BP Statistical Review of World Energy : July 1989
EUROSTAT : Energy Statistical Yearbook 1987
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TABLE 4 : CRUDE OIL IMPORTS BY SOURCE 1987[2] Mtoe :

	EUR12	USA*	JAPAN*	FDR	UK	ITALY
Total	347	273	158	43	37	78
OPEC	213	143	118	30	13	54
Near and Middle-East	135	2	15	10	8	33
Africa	106	17	1	19	6	30
Eastern Europe	42	–	–	5	4	12
Algeria	18	7	–	6	1	4
Libya	36	–	–	7	1	15
Nigeria	22	27	–	5	1	2
Iraq	33	4	9	2	4	8
Iran	29	13	9	1	2	7
Saudi Arabia	39	35	24	3	1	8
Kuwait	14	4	7	–	1	4
Qatar	2	–	9	–	–	1
UAE	9	4	32	1	–	5
Norway	32	4	–	4	15	–
Western Hemisphere[1]	26	–	–	–	–	–

* Crude Oil + NGL + Refinery Feedstocks Imports
[1] Approximate 1988 figure
[2] Figures rounded off

Sources : **EUROSTAT** : Energy Statistical Yearbook 1987 : p95
-------- : Energy Monthly Statistics, No 8 1989 : p60
INTERNATIONAL ENERGY AGENCY : Quarterly Oil Statistics and Energy Balances : 1st Quarter 1989 : OECD/IEA, Paris : pp166-333

TABLE 5 : CRUDE OIL : EXTRA-COMMUNITY IMPORTS :
1980-1987 : Mtoe

	Total				OPEC				% OPEC :Total	
	1980	85	86	87	1980	85	86	87	80	87
EUR12	488	328	356	347	420	234	246	213	86	61
Belgium	31	14	21	24	28	8	14	13	90	53
Denmark	4	2	3	4	2	1	1	2	54	58
WGermany	84	47	48	43	75	35	37	30	90	71
Greece	18	11	17	16	14	8	13	13	82	82
Spain	48	42	44	43	41	25	29	26	85	60
France	111	59	61	55	99	40	42	27	89	50
Ireland	2	-	-	1	2	-	-	1	99	100
Italy	92	69	80	78	68	50	61	54	74	70
Netherlands	46	29	38	41	43	21	29	30	93	72
Portugal	8	7	8	8	8	6	6	5	90	63
UK	44	32	36	37	40	14	15	13	90	35

* figures rounded off

Source : EUROSTAT : Energy Statistical Yearbook :
1987 : p94-95

TABLE 6 : NET IMPORTS OF PETROLEUM[2] : 1960-1988
(Million tonnes)*

YEAR	EUR12	BELGIUM	DENMARK	FDR	GREECE
1960[1]	156.5	-	-	-	-
1961	177.6	-	-	-	-
1962	199.2	-	-	-	-
1963	225.5	-	-	-	-
1964	263.3	-	-	-	-
1965	301.3	-	-	-	-
1966	338.2	-	-	-	-
1967	363.4	-	-	-	-
1968	408.4	-	-	-	-
1969	463.0	-	-	-	-
1970	538.3	26.9	19.3	122.5	6.0
1971	565.0	28.3	18.7	127.1	7.2
1972	595.8	29.1	19.6	134.0	8.8
1973	644.9	30.8	18.5	144.9	11.0
1974	621.0	28.7	17.6	132.1	10.4
1975	540.4	25.5	16.5	122.6	7.9
1976	586.2	25.9	16.1	136.1	11.6
1977	544.8	26.4	16.9	133.9	10.4
1978	538.1	27.1	15.8	138.3	12.0
1979	545.0	29.0	15.5	144.1	13.0
1980	496.3	25.9	13.2	130.4	13.2
1981	414.3	21.2	10.6	108.7	12.1
1982	377.9	22.0	9.5	103.2	10.3
1983	340.8	20.0	8.5	101.7	9.8
1984	348.1	18.7	8.4	103.7	9.9
1985	331.2	19.2	8.3	105.6	10.5
1986	354.1	22.9	7.5	114.8	12.2
1987	353.6	22.1	6.3	109.9	11.6
1988	365.3	22.8	5.0	109.8	12.3

[2] Crude oil and petroleum products [1] Crude petroleum 1960-69
* Figures rounded off

TABLE 6 : CONTINUED

YEAR	SPAIN	FRANCE	IRELAND	ITALY
1960	-	-	-	-
1961	-	-	-	-
1962	-	-	-	-
1963	-	-	-	-
1964	-	-	-	-
1965	-	-	-	-
1966	-	-	-	-
1967	-	-	-	-
1968	-	-	-	-
1969	-	-	-	-
1970	28.1	97.0	4.2	88.6
1971	33.2	103.9	5.1	91.9
1972	34.0	114.4	5.1	96.6
1973	40.3	128.8	5.6	103.8
1974	42.0	126.4	5.8	102.9
1975	41.6	102.6	5.1	90.3
1976	48.2	117.7	5.2	97.8
1977	46.7	110.9	5.7	96.4
1978	46.2	110.8	6.0	95.4
1979	48.8	121.3	6.3	99.7
1980	49.1	112.6	5.8	96.7
1981	48.1	93.7	4.9	92.5
1982	42.4	87.9	4.4	87.8
1983	42.2	81.5	4.0	80.8
1984	40.4	84.3	3.9	81.2
1985	37.9	81.0	3.8	79.9
1986	38.4	82.1	4.7	81.9
1987	39.8	84.9	3.9	85.8
1988	43.4	84.0	3.7	79.1

TABLE 6 : CONTINUED

YEAR	NETHERLANDS	LUXEMBOURG	PORTUGAL	UK
1960	-	-	-	-
1961	-	-	-	-
1962	-	-	-	-
1963	-	-	-	-
1964	-	-	-	-
1965	-	-	-	-
1966	-	-	-	-
1967	-	-	-	-
1968	-	-	-	-
1969	-	-	-	-
1970	36.0	1.3	4.7	103.7
1971	34.8	1.4	5.3	108.3
1972	38.4	1.5	5.7	108.9
1973	40.2	1.7	6.1	113.4
1974	35.8	1.6	6.7	111.6
1975	31.7	1.3	6.7	88.8
1976	38.0	1.4	7.3	80.9
1977	35.9	1.4	7.4	52.8
1978	36.3	1.4	7.3	41.3
1979	38.2	1.3	9.0	18.9
1980	37.5	1.1	9.3	1.7
1981	31.3	1.0	8.5	-18.7
1982	27.8	1.0	9.5	-27.8
1983	25.6	1.0	9.5	-43.0
1984	24.9	1.0	9.2	-37.5
1985	24.5	1.1	8.0	-48.5
1986	29.3	1.1	9.0	-50.0
1987	26.0	1.3	9.7	-47.7
1988	30.6	1.3	9.5	-36.5

Source : EUROSTAT (1989) : Basic Statistics of the Community : 26th ed. : OOPEC, Luxembourg : pp198-199

---------- (1989) : Rapid Reports No 6 1989 : p8

OECD (1975) : Statistics of Energy 1960-1974 : OECD, Paris : p84

TABLE 7 : PRIMARY ENERGY CONSUMPTION - BY FUEL* :
1987-1988 (Mtoe)

		USA	JAPAN	FDR	FRANCE	ITALY
Oil	1987	763	208	115	86	90
	1988	789	222	115	86	92
Natural Gas	1987	432	36	44	25	32
	1988	460	39	43	24	33
Coal	1987	453	69	73	18	15
	1988	480	76	73	17	15
Hydro-electric	1987	77	19	5	15	11
	1988	67	19	4	16	11
Nuclear energy	1987	124	46	29	53	+
	1988	145	43	32	55	+
TOTAL	1987	1849	378	266	197	148
	1988	1941	400	267	197	151
% Oil of energy consumption	1987	41.27	55.03	43.23	43.65	60.81
	1988	40.64	55.6	43.07	43.65	60.92

* figures rounded off
\+ less than 0.05

TABLE 7 - CONTINUED

		UK	Nether-lands	Total WEurope	Total OECD	Total EC
Oil	1987	75	32	585	1659	505
	1988	80	34	594	1715	511
Natural Gas	1987	50	34	207	734	187
	1988	48	30	199	763	191
Coal	1987	67	7	259	856	230
	1988	66	8	264	899	228
Hydro-electric	1987	1	-	106	281	39
	1988	1	-	108	279	43
Nuclear energy	1987	12	1	140	326	112
	1988	14	1	147	355	122
TOTAL	1987	205	74	1296	3855	1074
	1988	208	73	1311	4011	1096
% Oil of energy consumption	1987	36.59	43.84	45.13	43.03	47.05
	1988	38.46	46.93	45.30	42.75	46.62

Source : BP Statistical Review of World Energy : July 1989 : p34

TABLE 8 : OIL PRODUCTION (Mtoe)

	1978	1981	1986	1988	1988 share of Total (%)
Total EC	62.2	101.3	152.0	138.6	23.6
UK	53.3	89.4	128.6	114.2	3.8
Norway	17.2	24.9	44.1	56.0	1.8
Total Western Europe	85.5	129.6	198.0	198.0	6.5
USA	488.1	482.8	486.7	462.5	15.3
Japan	0.5	0.4	0.7	0.7	*
Total Middle East	1058.8	789.2	641.5	739.3	24.3
Saudi Arabia	409.8	491.3	251.2	257.1	8.5
Iraq	125.7	44.0	85.5	127.7	4.2
Iran	262.3	65.8	94.5	113.2	3.7
Abu Dhabi	69.7	54.5	50.4	61.8	2.0
Kuwait	97.0	48.2	62.3	66.8	2.2
Total NCW	2391.1	2171.8	2163.3	2249.5	74.2
China	104.1	101.0	130.7	136.1	4.5
USSR	572.5	609.0	615.0	624.0	20.6
Total World	3092.9	2903.7	2932.0	3030.8	100.0
Of which OPEC	1494.7	1150.4	950.7	1030.5	34.0

* less than 0.05

Source : BP Statistical Review of World Energy : July 1989
EUROSTAT : Energy Statistical Yearbook : 1987

TABLE 9 : OIL - PROVED RESERVES AT END 1988
(Thousand Million Tonnes)

	1988	Share of Total(%)	R/P Ratio*
USA	4.4	3.8	9.5
Mexico	7.5	5.9	53.5
Venezuela	8.3	6.3	86.6
Total Latin America	17.1	13.4	50.5
Norway	1.4	1.1	24.4
UK	0.6	0.5	5.0
Total Western Europe	2.4	1.9	11.8
Eur12	-	1.2	10.0
Abu Dhabi	12.1	10.1	**
Dubai	0.5	0.4	28.0
Iran	12.7	10.1	**
Iraq	13.4	10.9	**
Kuwait	12.7	10.0	**
Saudi Arabia	23.1	18.6	89.9
Total Middle-East	77.3	62.3	**
Libya	2.9	2.4	57.4
Total Africa	7.5	6.1	28.6
Total Asia & Australasia	2.7	2.3	17.5
Total NCW	112.5	90.8	50.2
China	3.1	2.6	22.8
USSR	8.0	6.4	12.8
Total World	123.8	100.0	41.0
Of which OPEC	91.8	73.8	89.2

* Years of production remaining at 1988 rate of production
** Over 100 years

Proved Reserves of oil are those quantities which geological and engineering information indicate with reasonable certainty can be recovered in the future from known reservoirs under existing economic and operating conditions.

Source : BP Statistical Review of World Energy : July 1989 : p2

TABLE 10 : CLOSING PETROLEUM* STOCK LEVELS
(1000t)

	1980	1985	1987
EUR12	179 052	126 460	131 108
Belgium	7 817	3 712	4 322
Denmark	6 950	5 706	5 909
FDR	46 464	13 769	37 916
France	34 745	19 492	17 534
Greece	4 495	7 744	4 607
Ireland	1 517	738	973
Italy	22 891	19 730	21 229
Luxembourg	115	118	152
Netherlands	16 960	10 574	10 874
Portugal	3 551	2 482	2 831
Spain	9 035	10 147	8 340
UK	25 117	16 745	16 213

* Crude oil and petroleum products

Source : **EUROSTAT** : Energy Statistical Yearbook 1987 :
OOPEC, Luxembourg : pp78-83

TABLE 11 : OFFICIAL CRUDE OIL PRICES
(US Dollars per barrel)

	Saudi Arabian 34° API	Iran (Light)	UK (Forties)	Spot Market Refined Product Price ($ per bl)
1948	2.06	–	–	–
1950	1.71	–	–	–
1955	1.93	–	–	–
1960	1.87	–	–	–
1970	1.80	–	–	–
1972	2.29	–	–	–
1973	2.59	–	–	–
1974	10.84	11.16	–	–
1975	10.40	10.67	–	–
1976	11.51	11.62	12.60	–
1977	12.09	12.81	14.00	13.39
1978	12.70	12.81	13.70	14.66
1979	13.34	13.45	15.45	31.29
1980[2]	26.00	30.37	29.75	33.73
1981[2]	32.00	37.00	39.25	34.05
1982[2]	34.00	34.20	36.50	31.59
1983[2]	34.00	31.20	33.50	28.29
1984[2]	29.00	28.00	29.90	27.68
1985[2]	29.00	28.00	28.55	30.13
1986	–	–	–	17.87
1987	18.00	–	–	20.13
1988	17.52	17.50	–	16.55[3]

[2] Saudi Arabian Light as at 1 January
[3] Third Quarter 1988

Source : BP Statistical Review of World Energy : July 1989 p14
MAULL H W (1980) : Europe and World Energy : Butterworths, London : p208
OECD (1988) : OECD Economic Outlook : No 44 December 1988 : p152